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Financing Firms in India

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Keywords
India, banks, markets, alternative finance, small and medium enterprises, growth

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With extensive cross-country datasets and India firm samples, as well as our own surveys of small and medium firms, we examine the legal and business environments, financing channels, and growth patterns of different types of firms in India. Despite the English common-law origin and a British-style judicial system, Indian firms face weak investor protection in practice and poor institutions characterized by corruption and inefficiency. Alternative finance, including financing from all non-bank, non-market sources, and generally backed by non-legal mechanisms, constitutes the most important form of *external* finance. Bank loans provide the second most important external financing source. Firms with access to bank or market finance are *not* associated with higher growth rates. Our results indicate that bank and market finance is not superior to alternative finance in fast-growing economies such as India.

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I. Introduction

Understanding mechanisms that promote sustainable long-term economic growth has long been a central mission for economists. During the past few decades, researchers have significantly advanced our knowledge by linking growth to the strength of legal protection of investors, effectiveness of institutions and the advancement of the financial system that includes a stock market and banking sector. Despite many cross-country studies, whether developing law, legal institutions, banks and markets is a necessary condition for economic growth remains an open question. Many studies accord each country in their sample an equal weight. Compared to large and diverse countries (e.g., India), small homogeneous countries (e.g., Singapore) may have more effective legal and financial institutions because they can be tailored to the needs of the domestic economy at relatively low costs. Moreover, most firm-level studies examine only large, publicly listed firms in each sample country and focus on financing channels through banks and markets. Backed by legal institutions (law and courts), banks and markets are more accessible to large and listed firms than to small and private firms in most countries. This approach thus obscures possibly considerable variations among corporate sectors and firms, and ignores other financing and alternative options to the legal system. Since in developing countries it is the small and medium firms that contribute most of the economic growth (e.g., Beck, Demirgüç-Kunt and Levine (2005)), we cannot generalize the importance of legal systems, banks and financial markets to all countries, especially large and diverse countries, based on results from a small number of large and listed firms.

In contrast to most existing research, our paper uses a single-country setting, India, one of the largest and fastest growing economies in the world, and provides a comprehensive examination of the complex linkages among legal and business environments, financing channels and growth patterns of different types of firms. We find substantial variations between large listed firms and small private firms, justifying our within-country approach. We also find that alternative finance, defined as non-internal financing from all non-bank, non-market sources, constitutes the most important form of *external* finance. Generally operating outside formal institutions, this form of finance is backed by alternative mechanisms

such as reputation, relationships and trust. Bank loans serve as the second most important form of external finance, while financial markets have played a limited role in financing the growth of Indian firms. Most existing research (e.g., Demirgüç-Kunt and Maksimovic (1998); Beck, Demirgüç-Kunt and Maksimovic (2005, 2008); Ayyagari et al. (2009)) characterizes the role of alternative finance as "picking up the slack" of bank and market finance, and thus it is more costly. Contrary to previous results, we find that firms' access to bank finance is *not* associated with higher growth rates. This result, however, is consistent with new theories (e.g., Allen and Qian (2010)) arguing that alternative finance, backed by alternative mechanisms, may have advantages compared to bank and market finance, backed by legal institutions, in fast-growing developing economies such as India.

We employ three types of data sets to conduct our analyses. We compare country-level data in India and a large sample of countries. We also compile a large sample of non-financial Indian firms, both large corporations and small and medium enterprises (SMEs), from the *Prowess* database of the Centre for Monitoring the Indian Economy (CMIE).[1] Finally, to overcome the lack of publicly available data for the SME sector, especially private firms, we also design and conduct two extensive surveys of SME firms, including their ownership structure, financing channels, and governance mechanisms. These surveys cover 212 entrepreneurs and senior executives of SME units located in and around the city of Hyderabad in southern India (76 firms) and the Delhi-Gurgaon area in northern India (136 firms).

Our analyses offer the first in-depth comparison on the roles of bank and market finance, along with legal mechanisms, versus alternative finance and nonlegal mechanisms, in supporting economic growth. We have two main findings. First, with all the firms from the *Prowess* sample, we find that internal finance accounts for 45% of total (annual) financing, while alternative finance accounts for 30% of financing. Small and unlisted firms rely on alternative (internal) finance for a much greater (smaller) proportion of their funding needs. On the other hand, Indian firms obtain 18.2% of their total financing from banks and only 6.5% from financial markets per year. Our survey evidence demonstrates that small

[1] CMIE is a Mumbai-based economic and business information and research organization. Its *Prowess* database provides financial statements, funds flows and product profiles for both large (listed) and small (unlisted) Indian companies.

firms rely mostly on alternative finance, such as funds from friends, families, and business partners, and trade credits, often without a written contract, to fund their investments, operations, and growth. About a third of the survey respondents find bank finance costly and difficult to obtain. We also find evidence that the reliance on alternative finance persists for years beyond the start-up phase, suggesting that such sources may be the preferred mode of financing even as firms mature and bank and market finance becomes more accessible.

It is widely accepted that well-functioning financial markets depend on sound legal and government institutions.[2] With its English common-law origin, legal protection of investors *by the law* in India is one of the strongest in the world. Moreover, India has had a British-style judicial system and a democratic government for a long time. However, our evidence paints a different picture of investor protection *in practice*. Based on widely used measures, the effective level of investor protection and the quality of legal institutions in India is far below the average for English-origin countries, and only slightly higher than the French-origin countries and other large emerging economies.[3] The wide gap between investor protection on paper and in practice can be partially attributed to a slow and inefficient legal system and government corruption.[4] Hence, one reason that financial markets have not played a more prominent role in the Indian economy is the lack of effective legal and other institutions in practice.

Our empirical tests using the Prowess sample confirm poor investor protection and legal institutions. Indian firms have much lower dividend payout and valuation (as measured by market-to-book ratios) than similar firms operating in countries with strong investor protection, but are closer to the firms in countries with weak protection (LLSV (2000, 2002)). Equity ownership is highly concentrated within the founder's family and/or the controlling shareholder, even among the largest listed firms,

[2] For example, the law and finance literature (La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998); LLSV hereafter) finds that countries of English common-law (French civil-law) origins provide the strongest (weakest) legal protection to both shareholders and creditors, and that stronger investor protection is correlated with better institutions and financial and economic 'outcomes.' India had a perfect score on the Creditor Rights index (4 out of 4) based on the Company's Act (1956) and LLSV (1998); its score of 5 out of 6 on the Anti-Director Rights index is the highest among more than 100 countries studied in Djankov, La Porta, Lopez-de-Silanes, and Shleifer (DLLS (2008)).

[3] Other studies also document this. DLLS (2008) construct anti-self-dealing indexes for more than 100 countries, and India's score of 0.55 (out of 1) is lower than the average (0.67) of English common-law countries.

[4] For example, an estimated 25 million cases are pending before the courts in India and it will take more than 300 years to clear the backlog (Bearak 2000).

similar to firms in other Asian countries (e.g., Claessens, Djankov, and Lang (2000); Claessens, Djankov, Fan, and Lang (2002)). Further, small firms exhibit stronger symptoms of a low investor protection regime. Our surveys indicate that the small firms rarely use the legal system. Over 80% of the respondent firms prefer not to seek legal recourse in situations such as customer defaults, breaches of contract, or commercial disputes. Nonlegal sanctions in various forms, such as loss of reputation or future business opportunities or even fear of personal safety, are far more effective deterrents against contract violations and non-payment of dues than legal recourses, and are employed widely.

Our evidence thus far documents the prevalence of alternative institutions and finance in the Indian economy, but an equally important question is whether alternative finance is as conducive as bank or market finance in supporting growth.[5] The prevailing view is that despite the limited supply of bank and market finance in developing countries, it is the preferred form of finance over alternative finance, and better firms with access to banks and markets grow faster. While this view may be true in developed countries such as the U.S. with advanced institutions, it is unclear the same can be said for developing countries. Research on political economy factors (e.g., Rajan and Zingales (2003a,b); Acemoglu and Johnson (2005)) shows that rent-seeking behaviors by interest groups can turn legal institutions into barriers to changes. We expect these problems to be much more severe in developing countries and the costs of building good legal institutions can be enormous.[6] In this regard, Allen and Qian (2010) argue that in fast growing economies like India, alternative finance, by not using the legal system, can minimize the many costs associated with legal institutions and better adapt to changes than legal institutions. In addition, while the initial fixed costs of alternative finance such as trade credits are high, once a network of firms, customers and investors is forged, the average costs over an extended period may be lower than the costs of market and bank finance that is based on arms-length relationships (e.g., Giannetti, Burkart,

[5] The finance and growth literature suggests that the development of stock markets and banks contributes to a country's economic growth (e.g., McKinnon (1973); King and Levine (1993); Levine and Zervos (1998)). Researchers have strengthened this view with evidence at the industry and firm levels, that the access to market and bank finance has a positive and *causal* impact on firm growth (e.g., Jayaratne and Strahan (1996); Rajan and Zingales (1998)).

[6] For example, Djankov, McLiesh and Shleifer (2007) find that, despite apparent significant economic benefits from reform, there is very little time variation of creditor rights over the past 25 years around the globe.

and Elligensen (2007); Giannetti and Yu (2007); Kim and Shin (2007)).

With the large panel data set from Prowess (more than 14,000 firms over a ten-year period) we empirically investigate these different views. The null hypothesis, based on the prevailing view, stipulates that firms with access to banks and markets have higher growth rates. Our second main finding is that the positive relation between bank finance and firm growth does *not* hold for Indian firms. In fact, we find a negative relation between firm growth (in sales or assets) and firms' access to markets (listing dummy) and banks (whether a firm has a bank loan during the sample period), after controlling for firm characteristics including location and regional development and correcting for possible survivorship biases due to higher death rates among smaller firms. Since the use of any form of finance is not an exogenous event, we try to control for the possible self-selection bias by introducing instrument variables, including the number of bank branches per firm and available bank credit per firm in a state. These credit supply variables are positively correlated with the likelihood of a firm has access to bank credit but they should not be directly linked to higher sales growth of the firm. We confirm that these are valid instruments, and our two-stage least square tests (2SLS) continue to show that access to bank credit has *no* positive impact on firm growth.

Overall, consistent with the 'Coasian view' (1937), alternative finance and institutions arise in an environment with weak institutions and underdeveloped banks and markets and become a vital engine for economic growth in India. Our results also suggest that, contrary to the common belief, alternative finance is not necessarily inferior to market and bank finance in fast-growing emerging economies.

Recently, other single-country studies have helped us better understand the connections among law, institutions, and finance in a given country (see, e.g., Stulz (2005) for a review). In particular, Allen, Qian, and Qian (hereafter AQQ (2005)) note that China, one of the largest and fastest growing economies in the world despite its poor legal and financial infrastructure and a corrupt and autocratic government, is an important counterexample to the law, finance, and growth literature. The authors find that alternative financing channels and governance mechanisms have supported the growth of the Private Sector in China,

the fastest growing sector in the country.[7]

India presents a different case from China. Transiting from a socialist system to a market-based system, China had no commercial legal system and associated institutions in place when its economy began to take off in the 1980s. India, on the other hand, has a long history of modern legal and other formal institutions and financial markets. Modeled after the British judicial system, India's legal system dates back more than two centuries. State Bank of India, the largest commercial bank, is over two hundred years old and thriving. The Bombay Stock Exchange (BSE), at 130 years, is the oldest in Asia and currently one of the two major exchanges in India. Yet, Indian firms in general, and the smaller firms in particular, rely more on alternative institutions and finance than banks, markets and legal institutions to fund growth. Similar to China, firms that rely on these alternative mechanisms have growth rates that are as high as or higher than those with easier access to legal institutions, banks and markets.

The rest of the paper is organized as follows. Section II presents aggregate evidence on law and institutions in India and other countries and examines the size of banks and markets. Section III uses the Prowess sample to examine the patterns of Indian firms' ownership, payout, valuation and financing. Using our surveys of SME firms, Section IV shows how the surveyed firms effectively substitute non-legal mechanisms and alternative financing sources for ineffective legal institutions and bank and market financing. Section V examines whether firms' access to banks and markets is associated with higher growth. Finally, Section VI concludes. Appendix A explains the special variables used in the paper.

II. Law, Finance, and Growth in India: Aggregate Evidence

At independence from the British in 1947, India inherited one of the world's poorest economies. The manufacturing sector accounted for only one tenth of the national product. However, the economy had arguably the best financial markets in the developing world, with four functioning stock exchanges

[7] In addition, Franks et al. (2006) and Franks et al. (2009) study and conclude that the evolution of formal regulations had little impact on the evolution of corporate ownership structures in Germany and the U.K. in the 19th and 20th centuries, and that financial development in these countries relied more on informal relations of trust among investors, firms and intermediaries.

and clearly defined rules governing listing, trading and settlements; a well-developed equity culture if only among the urban rich; an established banking system with clear lending norms and recovery procedures; and better corporate laws than most other erstwhile colonies. The Company's Act of 1956, as well as other corporate laws and laws protecting the investors' rights, were built on this foundation.

After independence, a decade-long turn towards socialism put in place a regime and culture of licensing, protection, and widespread red-tape breeding corruption. In 1990-91 India faced a severe balance of payments crisis ushering in an era of reforms comprising deregulation, liberalization of the external sector, and partial privatizations of some of the state sector enterprises. For about three decades after independence, India grew at an average rate of 3.5% (infamously labeled "the Hindu rate of growth") and then accelerated to an average of about 5.6% since the 1980's. With information from the IMF World Economic Outlook database, Table 1 lists GDPs of the largest ten economies based on simple exchange rates and purchasing power parity (PPP), the growth rates in GDPs and per capita GDPs (both in constant prices) during 1990-2010. In 2010, India's PPP-adjusted GDP was the fourth largest in the world; its GDP growth rate of 6.5% and per capita GDP growth rate of 4.7% during 1990-2010 were the third highest in the world. With a population of 1.15 billion (the second largest in the world) at the end of 2009, India is certain to play an increasingly significant role in the world economy in the years to come.

In 2004, 52% of India's GDP was generated in the services sector, while manufacturing and agriculture accounted for 26% and 22%, respectively. In terms of employment, however, agriculture accounted for about two-thirds of the total labor force (almost half billion), and over 90% of the labor force worked in the "unorganized sector."[8]

II.1 Law, Institutions and Business Environment

A striking fact about India's legal system is the difference between superior investor protection *de jure* as opposed to inferior protection *de facto*. In Panel A of Table 2, we compare India's scores along several dimensions of law and institutions with (the simple averages of) fifteen large emerging economies

[8] According to the official definition, the unorganized sector comprises: 1) all the enterprises except units registered under Section 2m(i) and 2m(ii) of the Factories Act, 1948, and Bidi and Cigar Workers (condition of employment) Act, 1966; and 2) all enterprises except those run by the government (central, state and local bodies) or Public Sector Enterprises.

(the same countries are also included in Table 3 below). With the exception of China, all the other emerging economies are also included in one of the four LLSV country groups according to its legal origin (indicated by the letters E, G, and F in the bracket after country name). Comparisons with the four LLSV country groups are included in Panel B of Table 2. As discussed earlier, with its English common-law origin India provides strong protection for investors on paper. For example, the scores on both creditor rights (4 on a 0-4 scale in LLSV (1998) based on the Company's Act of 1956) and shareholder rights (5 on a 0-6 scale in DLLS (2008)) are the highest in the world.[9] Even with a revised score of 2 on creditor rights (Djankov, McLiesh and Shleifer, hereafter DMS, 2007), based on the Sick Industrial Companies Act of 1985, India still ranks higher than the average for other emerging economies (1.47) and for all the LLSV country groups (1.80).[10]

To compare law enforcement and the quality of institutions, we employ five sets of widely used measures in Table 2 as compared to those used in the original work of LLSV (1998). First, corruption is a major systemic problem in many developing countries and is of particular importance to India. Studies by the World Bank have found that corruption was the number one constraint for firms in South Asia and that the two most corrupt public institutions identified by the respondents in India (as well as in most countries in South Asia) were the police and the judiciary. Based on Transparency International's Corruption Perception Index, India had a score of 3.3 on a 0-10 scale in 2006 (a higher score means less corruption), slightly higher than the average for the other emerging economies (3.12) and much worse than the average for each LLSV country group.

To assess the efficiency and effectiveness of the legal system for contract enforcement, we use two measures. First, the legal formalism index (DLLS (2003)) measures the level of intervention in the country's judicial process on a 0-7 scale whereby a *lower* score indicate less formalism and is more

[9] See Spamann (2010) for a different view on the coding and interpretation of LLSV's anti-director rights index.
[10] Since 1991, two major improvements have taken place in the area of creditor rights protection – the establishment of the Debt Recovery Tribunals that have reduced delinquencies and lending rates (Visaria (2009)), and the passing of the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act in 2002 and the subsequent Enforcement of Security Interest and Recovery of Debts Laws (Amendment) Act in 2004. These laws have paved the way for the establishment of Asset Reconstruction Companies and allowed banks and financial institutions to act decisively against defaulting borrowers.

desirable. India's index, 3.51, is better than the average for the other emerging economies (4.07), and slightly below the average of all LLSV country groups (3.58). Second, the legality index (Berkowitz, Pistor, and Richard (2003)), a more comprehensive measure of the effectiveness of a country's legal institutions than the formalism index, represents the weighted average of five different estimates of the quality of legal institutions and government in the country. The index ranges from 0 to 21, with a *higher* score indicating a more effective legal system. While India's score (11.35) is marginally better than the average for the other emerging economies (10.25), it is appreciably worse than the average for each LLSV country group.

We also compare two measures of the quality of the accounting systems. The disclosure requirements index (LLS (2006)) measures the extent to which listed firms have to publicly disclose their ownership structure, business operations, and corporate governance mechanisms. The index ranges from 0 to 1, with a higher score indicating more disclosure. India's score of 0.92 is higher (or equal to) than that of all other emerging economies and the average of each LLSV country group, suggesting that Indian firms must disclose a large amount of information. However, this does not imply the quality of disclosure is good. In terms of the degree of earnings management (Leuz, Nanda, and Wysocki (2003)), whereby a higher score means *more* earnings management, India's score (19.1) is higher than the average for other emerging economies (16.61) as well as the average for all the LLSV country groups (16.00). Therefore, evaluating Indian companies based on publicly available reports is difficult.

As for the business environment in India, a recent World Bank survey found that, among the top ten obstacles to Indian businesses, the three which the surveyed firms considered to be a "major" obstacle and which also exceeded the corresponding world averages are corruption (the most important problem), availability of electricity, and labor regulations. With rampant tax evasion, the shadow economy in India is significant and estimated to be about 23% of GDP.[11] To summarize, despite strong protection provided by the law, legal protection is considerably weakened in practice by corruption within the government and

[11] This figure is 22.4% according to Schneider and Enste (2000), and 23.1% by Schneider (2002). Popular perception would put it significantly larger, given that the corresponding average figure for OECD countries is about 12%.

an ineffective legal system. While the need for judicial and legal reforms has long been recognized, little legislative action has actually taken place so far (Debroy (2000)).

II.2 Financial Markets and Banks

Table 3 compares India's capital markets and financial institutions with those of the same fifteen emerging economies included in Table 2 and the four LLSV country groups, using the average figures over the period 2001-2007. The comparisons with other large emerging economies are perhaps more appropriate, since the *weighted* averages for the LLSV groups are driven by large developed economies.[12] Despite the long history of India's stock exchanges, and the presence of a large number of listed firms (over 10,000), the size and role of the capital markets in allocating resources have been limited in India, as in many other emerging economies. The equity markets were not an important source of funding for the non-state sector until recently. As shown in Table 3, over the period 2001-2007, total market capitalization of India's stock market is 64% of its GDP, somewhat larger than the average of the other emerging economies (0.58). It is, however, lower than each of the LLSV country groups except for the French origin countries and considerably lower than the average for all the country groups (1.01). In terms of total value traded in a given year over GDP, which measures how active stocks are traded in the markets, India's ratio (0.57) is significantly higher than the average of other emerging economies (0.37); it remains significantly lower than each LLSV country group (except for the French origin countries) and the average of all four country groups (1.32). Finally, the corporate bond market in India (not reported in tables) remains small, and is viewed as a source of concern by all observers of India's capital markets.

Table 3 also indicates that India's banking system has been under-utilized in providing credit. The bank credit/GDP ratio for India (0.37) is substantially lower than the average ratio for the other emerging economies (0.65); the other leading economies in Asia, such as China, Malaysia and Thailand, as well as South Africa, all have much higher ratios (over 100%). India's credit ratio is also far below that of each LLSV country group. However, the efficiency of the Indian banking sector, measured by the ratio of non-

[12] The measures are based on Demirgüç-Kunt and Levine (2001) and Levine (2002), and data is from the World Bank Financial Database. The averages for the other emerging countries (excluding India) and for each of the LLSV country groups and all four groups are *weighted* averages with the countries' GDPs in each sample year as the weights, and then averaged over years.

performing loans (NPLs) over total bank loans (7%), has been superior to most other emerging countries (with an average of 10%), but below each of the LLSV country group.[13]

Both the "structure size" and "structure activity" figures for India are positive, indicating that total market cap and value traded are greater than total bank credit, and hence India has a market-dominated financial system. India's figures are also higher than the averages of other emerging economies, suggesting that the dominance of markets over banks in India is more pronounced than in other developing countries. This is mainly due to the small amount of bank credit rather than the size of the stock market. In terms of the relative efficiency of markets vs. banks ("structure efficiency"), India (−3.11) is similar to other emerging economies (the average is −3.15), but greater than the averages of English and Nordic origin countries that have much lower NPL ratios (thus more efficient banking sectors). "Structure regulatory" measures the degree of restrictions placed on commercial banks engaging in firm operations and securities, insurance and real estate markets. Indian banks are more constrained than those in other developing countries and all LLSV country groups. Finally, in terms of the development of the financial system (both banks and markets), India's overall financial market size, measured by "finance activity" and "finance size," is slightly larger than that of the average emerging economy, but much smaller than the average of LLSV country groups.[14]

Based on the simple cross-country comparisons from Table 3, we conclude that India's stock market is larger than many other emerging economies, while its banking sector is under-utilized and does not provide much credit.[15] We close this section by emphasizing three facts about the Indian economy. First, a large and diverse country, India has had recent success in overall economic growth. Second,

[13] Levine (2002) uses the ratio of overhead costs over assets as the measure for bank efficiency. This variable is not available in the World Bank database, and we use NPL ratios as a substitute. We also re-calculate all the figures in Table 3 using 2009 data. The size of banking sectors and markets in most emerging economies is larger relative to the earlier period, while the NPL ratios of the LLSV groups (except for the Nordic group) rose sharply relative to those of India and other emerging markets.

[14] "Structure activity" is defined as log(value traded ratio/bank credit ratio), "structure size" is log(market cap ratio/bank credit ratio), and "structure efficiency" is log(market cap ratio×bank NPL ratio). "Finance activity" is equal to log (value traded ratio×bank credit ratio), "finance size" is log (market cap ratio×bank credit ratio), and "finance efficiency" is equal to log (value traded ratio/bank NPL ratio). See Demirgüç-Kunt and Levine (2001) for more details.

[15] Beck, Feyen, Ize and Moizeszowicz (2008) use cross-country regression models to compare the size of a country's financial system relative to the predicted size based on the country's 'fundamentals.' They find that India's financial system is larger than the predicted value (except for the bond market) and this gap has increased over time.

despite strong investor protection provided by the law, actual protection is weak in India owing to the inefficiency of legal institutions and corruption. Third, the overall size of India's financial system (markets and banks) is comparable to other large emerging economies. In the rest of the paper we present micro-level evidence on financing patterns and growth, and how some Indian firms use non-legal mechanisms and alternative financing sources to succeed in achieving high growth rates.

III. Indian Corporate Sectors: Firm-level Evidence from the *Prowess* Database

The organized sector of the Indian economy consists of the state and the non-state (private) sectors. The state sector comprises Public Sector Undertakings (PSUs), in which the government has majority (at least 50%) ownership and effective control. Almost all the PSUs are "public companies" as defined by the Indian Company's Act of 1956 (a company that has a minimum paid-up capital of Indian rupees 500,000, or US$11,100, and more than 50 shareholders). The non-state sector includes over 76,000 public companies and numerous smaller 'private' companies (with less than 50 shareholders). Over 10,000 of the "public" companies are listed on one or more of the stock exchanges, though a small fraction of them actually trade. Finally, there is an unorganized sector that consists of smaller businesses that do not belong to any of the above categories. Verifiable data about the unorganized sector is scarce. Therefore, the figures and analysis we present in this paper cover only the organized sector.

During the period 1990-2003, as measured by the contribution to GDP, the size of the state-sector, excluding government spending, has been around one fifth of the non-state sectors including unorganized sectors but excluding agriculture.[16] In terms of capital base, paid-up capital (the product of the number of shares outstanding and the face value of the shares, excluding reserves and surpluses) in the state sector grew at an annual rate of 3.37%, with its share in the economy-wide total corporate paid-up capital declining from 73% to 28% during 1990-2003. By contrast, paid-up capital in non-state corporations has been growing at an annual rate of 21.51% over the same period.

[16] Among non-state sectors, firms operating in the services industries (e.g., commerce and hotels, community and business services) had surpassed traditional manufacturing industries in terms of number of units and size of investments.

Firms in the SME sector constitute an important segment of the Indian economy, contributing to over 40% of the value added in manufacturing (according to O. S. Kanwar, the President of FICCI, a national chamber of commerce in India). The official definition of an SME is different for manufacturing and services sectors. Under the "Micro, Small and Medium Enterprises Development Act 2006" of the Government of India, a manufacturing firm that has investments in fixed assets of plant and machinery below Rs. 100 million (US$ 2.22 million) qualifies as an SME; for firms in the services sector, the ceiling is Rs. 50 million (US$ 1.11 million) in fixed assets.

In the remainder of this section, we analyze the patterns of ownership, financing, payout and valuation of firms in manufacturing and services industries. We also examine whether these patterns are different from firms in other countries (LLS (1999); LLSV (1997, 2000, 2002)). While public companies under the Indian Company's Act of 1956 are required to make their financial statements publicly available, verifiable financial data for private companies are not available. Our sample is from the CMIE *Prowess* database and includes both listed and unlisted companies. The raw sample includes more than 14,000 non-financial firms. Table 4 provides a snap shot of some descriptive statistics of the 8,304 firms with data available in 2005. In our subsequent analyses, we classify all the firms into four categories:

1. Large Enterprises in the manufacturing sector (LE-M);
2. Large Enterprises in the services sector (LE-S);
3. Small and Medium Enterprises in the manufacturing sector (SME-M);
4. Small and Medium Enterprises (SMEs) in the services sector (SME-S).

We adopt the definitions of LE vs. SME sectors because they are used widely in the Indian context. To qualify for inclusion in either of the two SME categories, a firm had to satisfy the definition of SME in *each* year of the sample period. Similarly, the firms in our two Large Enterprises categories had fixed assets larger than the SME ceiling in each year. We also redo all of our tests (including those in Section V below) using size sorting based on book assets, and all of our major results continue to hold without the LE-SME classification system.

III.1 Financing Patterns

Examining financing patterns of different types of firms is one of the central goals of the paper. The Prowess database provides detailed information on firms' (annual) internal and external financing channels for an extended period; external financing channels include equity (private and public placements), debt (raised from the markets, banks/institutions, and group companies and promoters), trade credits, and other sources. For all the firms and the four subgroups of firms in our sample (LE-M, SME-M, LE-S, SME-S), we also define and classify all the financing channels into four categories:

- *Internal sources*: net income after dividends + depreciation + provisions or funds set aside;
- *External financing through banks*: debt/loans from banks and other financial institutions;
- *External financing through markets*: equity (stock) and debt (bonds) raised from capital markets;
- *Alternative (external) finance*: equity and debt raised from *private* sources including group companies, promoters and founders, trade credits, and other liabilities.

To fully utilize all the available firm-level data, and to partially control for a possible survivorship bias that may affect firms' financing patterns in certain years (e.g., the last year before a firm goes into bankruptcy), we include all the firms as long as we have at least two years' data during the five-year period (2001-2005) on the amount raised from all the financing channels. This process yields a total of 12,344 unique firms with financing data available for at least one year during 2001-2005. Table 5 provides evidence on the sources of funds for these firms: Panel A shows financing patterns (using the Prowess definitions) of Large Enterprises as well as the subgroups based on industries (services vs. manufacturing) and listing status (listed vs. unlisted); Panel B does the same for the SME sector; Panel C provides a summary of financing patterns of all firms, the LE and SME sectors, using our own definitions of (four) financing channels.

For each firm group, we first take the average of the amount of funds raised from each financing source over the five-year period (2001-2005) for each firm; this approach should eliminate most of the impact of business cycles on time series variations in financing. We then sum this average across firms (within the group) to obtain the total funding (per year) from each source. Finally, the reported numbers in Panels A-C represent the *percentage* of total (annual) funding coming from each financing source.

Effectively, we adopt a 'value-weighted' approach in that large firms will carry more weights in the calculations of the importance of a funding source. In Panels A-C, we also report median firm size (median of the five-year average of book value of assets of all firms) for each firm group.

Panel A of Table 5 first indicates that large Indian firms obtain 46.6% of their (annual) total financing from internal sources; these sources generate as much as over 60% of all financing for listed manufacturing firms (the largest firm subgroup in terms of median assets) but only 28% of all financing for *unlisted* manufacturers (the smallest firm subgroup). Among external financing channels, equity (private and public placements combined) and debt from banks and institutions each accounts for almost 17% of total financing of large firms. We will differentiate privately raised equity and publicly placed equity in Panel C below when we construct the market finance and alternative finance measures. It appears that unlisted firms (in both manufacturing and services) rely more on bank loans than listed firms. Consistent with aggregate evidence presented earlier, debt raised from the capital markets (e.g., corporate bonds) is not an important funding source even for large firms. Finally, trade credits constitute the third most important source of external financing for large firms (11.2% per year).[17]

Panel B indicates that firms in the SME sector have significantly different financing patterns from those in the LE sector. First, internal sources only account for about 15% of total financing for all SMEs but there exists significant variations among subgroups. While unlisted SMEs generate only 11.2% of all funding internally, listed SMEs, which are significantly larger than unlisted SMEs, rely on internal sources for almost 40% of total financing (for listed firms in services, the largest firm group of the SME sector, this ratio is 58.7%). Second, equity (private and public combined) is the most important financing source, accounting for over 30% of all funds raised for all SMEs (for listed SMEs in services this ratio is over 44%). Third, consistent with evidence from other countries (see, e.g., Petersen and Rajan (1994) and Berger and Udell (1995) for evidence on small firms in the U.S.), SMEs overall also rely more on bank finance than those in the LE sector. In contrast to evidence from developed countries, SMEs also rely

[17] The definition of trade credits from the Prowess database is "…liabilities due in the next twelve months for purchase of goods/services and expenses; bills payable/acceptances are also included," which is consistent with the usual definitions.

more on trade credits (15.83% annually) than large firms in India. Finally, the listing status for SMEs in the services sectors also makes a considerable difference in the importance of these two financing channels (unlisted SMEs use banks and trade credits much more). An important question is whether trade credits and other forms of alternative finance are inferior to bank and market finance, and we examine this question in Section V below.

One of our main goals is to compare the importance of bank and market finance vs. alternative finance across different types of firms. As specified above, alternative finance includes trade credits, debt raised from group companies and promoters, and "other sources." In addition, while publicly placed equity is a major component of market finance, privately raised equity belongs to alternative finance. However, the breakdown of equity (into private vs. public placement of any firm) is not available in the Prowess database. To this end, we classify all the equity raised by *listed* firms to be market finance, and all the equity raised by *unlisted* firms to be alternative finance. Note that this classification system actually *overstates* the relative importance of market finance over alternative finance, since a fraction of listed firms' equity probably comes from private placements (anecdotal evidence suggests that this is indeed the case) while 100% of unlisted firms' equity, by definition, comes from alternative sources.

Panel C of Table 5 first shows that the most important financing channel for Indian firms is internal finance (45.3% of all financing), and consistent with evidence from developed countries, larger firms generate more internal finance and rely less on external channels. Second, the most important external financing channel is alternative finance (30% of all financing). Perhaps not surprisingly, SMEs rely much more on alternative finance (50%) than large firms (29%) for their funding needs, and unlisted firms (37% for unlisted LEs and 55.3% for unlisted SMEs) generate more financing from alternative sources than listed firms (21.4% for listed LEs and only 16.2% for listed SMEs). Bank finance is the second most important external financing channel for Indian firms (18.2% of all financing), and provides a more significant source for SMEs and unlisted firms. Finally, market finance (publicly raised equity and debt) only provides about 6.5% of firms' total financing. There are again considerable variations among

subgroups in terms of the importance of market finance: listed SMEs rely on the markets for almost 25% of all of their funding needs, while market finance (mostly in the form of corporate bonds) only accounts for 2.8% of unlisted large firms' total financing.

We confirm the findings in Table 5, Panel C in panel regressions (OLS) with the (continuous) dependent variable the proportion of alternative finance among all financing channels of a firm in a given year. The results are presented in Table 6. We include firm size and age, an indicator for listed firms (equals one if a firm is publicly listed at the *beginning* of a given year), an indicator for SME firms and another indicator for *listed* SME firms; we also include ownership types in Model 3 (with foreign ownership as the 'default' group). To capture regional differences, we include both a financial development variable (per capita bank credit of a state) and an overall economic development variable (per capita GDP at the state level) as controls. In all the models we include industry, location (state) and year fixed effects, and we cluster standard errors of all firms from the same state to allow for possible dependence of error terms across firms. From Table 6, we can see that larger and listed firms rely less on alternative finance (the coefficient on firm size is marginally significant in Model 1 only), but older firms actually rely more on alternatively finance (including trade credits). Consistent with the findings from Panel C, *unlisted* SME firms rely more on alternative financing sources for their funding needs (significant at 5% in Models 2 and 3).

Overall, the results shown in Tables 5 and 6 are consistent with the findings in the *Reserve Bank of India* (2005) based on financial reports of around 2,000 *public* companies; similar financing patterns of SMEs in the Prowess sample are also found in our own surveys of SME firms (in Section IV below). The importance of alternative financing sources for corporate sectors in India, such as trade credits and privately placed equity, is confirmed in all the studies using different databases and methodologies.[18] Unlike prior studies focusing on banks and/or financial markets, we analyze the entire corporate financing

[18] Relative to other financing channels, trade credits (bank loans) are less (more) important for Indian firms as documented in our paper if one uses firm-level data from World Bank's global Investment Climate surveys (of mostly nonlisted firms in more than 100 countries). While the World Bank survey data (two years' data for Indian firms) is based on qualitative questions on the relative importance of various financing channels, our calculations of financing sources are based on firms' annual reports collected by the *Prowess* database. The Prowess database covers more firms nationwide and over a much longer time period.

system in India, including alternative finance. Our methodology enables us to find out the relative importance of bank and market finance *vis-à-vis* alternative finance, and underlines the limited relevance for India of the implications of much of the existing literature focusing on market finance.

Our evidence suggests that alternative finance has substituted for market finance, especially for small and unlisted firms. Most observers would interpret these patterns as evidence that small and/or unlisted firms face more obstacles in financing as compared to large firms, and that alternative finance is more costly than bank and market finance.[19] In Section V below, we examine different hypotheses on the relation between bank and market finance and firm growth in India.

III.2 Dividend Policy and Valuation

Panel A of Table 7 compares external financing sources at the firm level for India and the country groups studied in LLSV (1997). The data for the other country groups are taken from *Worldscope* database for the same period (2001-2005) as our India sample, and the same approach used by LLSV to compute country-level variables is followed.[20] While we report ratios for both large and small firms in India, only the figures for large firms should be compared with the other country groups, as the *Worldscope* firms are generally much larger in size than small Indian firms. The table indicates that the large Indian firms rely less on equity financing than LLSV firms. The ratio of market capitalization to sales (0.36) is lower than not only the average for all country groups (0.81) but also each single group including the French-origin countries.[21] The evidence on (long-term) debt financing is mixed. The debt/sales ratio for large Indian firms (0.29) is lower than English-origin countries (0.38) but higher than French-origin countries (0.11). LLSV (1997) find that investor protection does not explain firm-level debt

[19] SME firms in other countries also face problems in accessing institutional finance. For example, small firms in the U.S. have difficulties in obtaining bank loans, but part of the funding slack has been provided by private equity (angel financing and venture capital) and privately and publicly issued bonds (e.g., Berger and Udell (1995, 1998)).

[20] In LLSV (1997), a ratio (e.g., market cap/sales) for a given country is the *median* ratio for all the firms from the country, and the ratio for a country group is the simple average of the country ratios. For all the countries other than India, we use their method but re-compute the figures with *Worldscope* 2001-2005 data (same database for LLSV). For India, we take the median ratio for all the firms in our *Prowess* sample during 2001-2005. A caveat is in order: shares of a large majority of listed firms in India trade infrequently; hence, variables based on market prices (such as market capitalization or Tobin's Q) may be less informative than accounting information.

[21] All the differences are statistically significant. The null hypotheses that a) the samples of Indian large firms and LLSV country groups come from the same distribution, and b) the ratios are the same, are strongly rejected (p-value < 0.0001).

financing patterns across countries, and attribute it to intervention by the government and other non-market forces in the granting of bank loans. Panel A of Table 7 also indicates that large Indian enterprises rely more on debt financing than SME firms, but they rely less on equity financing than SME firms (market cap to sales ratio is 0.36 for large firms versus 0.6 for SMEs). These findings are consistent with what we have seen from Table 5 above. It is worthwhile to note again that equity financing here for the SMEs includes non-market equity, including contributions by the founder's friends and family.

Next, we examine the dividend policy and valuations of firms in India, and compare the results to those studied by LLSV (2000, 2002).[22] LLSV (2000) find that firms in countries with poor protection of outside shareholders tend to have low dividend payout ratios attributable to severe agency problems, while LLSV (2002) find that firms in countries with poor shareholder protection tend to have low valuation, as measured by the Tobin's Q (market-to-book assets) ratio. From Panel B of Table 7, the median Indian firm (large or small) does not pay any dividend; in fact, in the last year of our sample period, 2005, over 60% of all Indian firms and over 80% of SMEs did not pay dividends. Regarding valuation, the Tobin's Q for large Indian firms (0.71) falls not only below the corresponding figure for all country groups combined (1.04), it is in fact lower than every single country group in the table, and the ratio for Indian SMEs is even smaller (0.57). Overall, evidence from Table 7 is consistent with Indian firms operating in an environment with low investor protection.

III.3 Ownership Structure

Since only listed companies are required to disclose their ownership patterns (Clause 35, Listing Agreement, Securities and Exchanges Board of India), data is available for 2,735 firms during the period 2001-2005. Table 8 compares the ownership structure of the Indian firms to that of the Claessens et al., (2000) sample of listed Asian firms (excluding Japan), the AQQ (2005) sample of over 1,100 listed firms from China, and the LLS (1999) sample of over 1,000 listed firms from 27 countries (India excluded). Panel A indicates that the controlling interests in 75.3% of the Indian firms reside with a particular

[22] LLSV (2002) examine Tobin's Q of 539 firms in 27 wealthy economies and India is excluded. LLSV (2000) examine dividend policies of over 4,000 companies in 33 countries, but only one Indian firm in included in the sample.

individual or family. The dominance of family/individual ownership of Indian firms is similar to those of other Asian countries (e.g., Claessens et al. (2000); Claessens et al. (2002); and AQQ (2005)). In fact, India has a higher proportion of family/individual held firms than *all* country groups reported in the table and China. Even among the largest non-financial firms in India, which are included in the BSE 500 Index (based on a total of 317 non-financial firms), founder's family and/or other individuals are the controlling shareholder in 68.6% of them.[23] Further, similar to other Asian countries, only 3.4% of the Indian firms are widely held, i.e., no shareholder owns more than 10% of the equity. Finally, in 7.7% of Indian firms (and almost 14% among BSE 500 firms) the controlling shareholder is a non-resident Indian or foreign investor or entity. LLSV (1998) and LLS (1999) find that countries that protect minority shareholders poorly (strongly) tend to have more concentrated (dispersed) ownership.[24] The observed ownership structure of Indian firms is once again, more consistent with that of a low investor protection country.

To summarize, our results in this section show that Indian firms obtain most of their financing from internal and alternative (external) sources, and have not relied on financial markets for much of their funding needs. Based on the comparisons between large and small Indian firms with the other country groups, we also find that several characteristics, including low levels of financing from markets and banks, low dividend policy and valuation, and concentrated ownership, do not follow the predictions of the law and finance literature given its strong investor protection by the law. In fact, these characteristics indicate that Indian firms appear to be more consistent with a low investor protection country.

IV. Survey Evidence of the Small and Medium Sector

In previous sections we find that SME firms, a vibrant sector of the Indian economy, have many distinctive characteristics as compared to large enterprises. Since the majority of SME firms are privately owned, the *Prowess* database only provides limited information on some of the largest SME firms. To

[23] We do not have detailed information on the identities of all of the largest shareholders of these firms (e.g., whether they belong to the same family or a *group* of a few unrelated block-holders), but we are certain that the largest block of equity of these firms is *not* held by an organization, the government, or a large number of dispersed shareholders.
[24] See Holderness (2009) for an alternative view on ownership concentration and legal protection of investors.

overcome the lack of publicly available firm-level data, we also design and conduct two extensive surveys of SMEs. Our survey design focused on three broad areas: corporate financing and investments, ownership structure and corporate governance, law, institutions, and business environment. Based on a review of survey-based papers in the law, finance and growth literature (e.g., Graham and Harvey (2001); DLLS (2003); McMillan and Woodruff (1999a, b); Johnson et al. (2002); AQQ (2005)), we developed our survey questionnaire with special attention to the business and legal environment in which Indian SMEs operate, while trying to avoid biases induced by the questionnaire and maximize response rates. The final version of the survey included 36 questions (most with subparts) in four sections. The survey instrument and tabulated survey results (including the response rate for each question) are available at http://www.isb.edu/faculty/rajeshchakrabarti/india-survey.zip.

We deployed graduate students, as field investigators under the supervision of researchers from the Center of Analytical Finance at the Indian School of Business, Hyderabad, to administer the questionnaire to each of the respondents in face-to-face interviews.[25] Our final sample consists of 136 SME units in and around New Delhi in North India and 76 SME units in and around the South Indian city of Hyderabad.[26] The sample spans several industries including engineering, chemicals, packaging and software. The firms range in age from start-ups (less than one year old) to about 85-year old companies, with a more or less continuous distribution of firms started in the 1958 to 2005 period. Table 9 presents descriptive statistics for the firms in our survey.

IV.1 Ownership Structure, Corporate Governance and Legal Environment

In about 85% of the SMEs surveyed, the largest share block belonged to the founder and his family (all firms in our sample had male founders). This number is higher than 75% observed for the large

[25] We did not follow the mailed questionnaire method to administer the surveys. The targets of our survey are private firms that are reluctant to reveal in writing their key financial and business information. Further, the nature of our questions dealing with sensitive information required us to ensure that the responses came from the owners or top executives of the surveyed units.

[26] The firms were selected from several industrial parks in the New Delhi and Hyderabad areas that provided industrially diversified clusters of firms. The clusters include the Mayapuri Industrial Area, Naraina Industrial Area, WHS Kirtinagar cluster in Delhi and Patanchera and Jeedimetla Industrial Development Areas (IDAs), the Katedan Industrial Estate and the Bharat Heavy Electricals Ltd. (BHEL) Ancillary Industrial Estate at Ramachandrapuram in Hyderabad. Given the diversity of the surveyed firms, a number of questions in the survey did not generate 100% response.

sample of SME firms (see Table 8 above). About 70% of the businesses had *unlimited* liability. When asked how the owner planned to protect personal assets in case of business failure, 96% of the respondents preferred negotiating with debtors for an extension; 14% of these respondents also planned to file for personal bankruptcy. There appears to be little separation between ownership and control in the typical SME environment, with the owner keeping a close watch over day-to-day functioning even with a hired CEO. About 50% of the units that had non-owner CEOs (or equivalent) indicated that the CEOs enjoyed "no discretion" or "little discretion" in their business decisions, and had to consult the owners for most decisions. When asked about the possibility of an outsider buying up a firm's assets in case of bad management, 57% thought it was "very likely".

Reliance on Law

In order to analyze the responses to various survey questions on different aspects of legal and financing mechanisms, we construct several indices based on the survey responses largely in line with the methodology of Johnson et al. (2002). To capture the various dimensions of a firm's dependence on the available legal recourses, we construct a "Reliance on Law" (ROL) index. The index combines the responses to three questions in our survey enquiring about the firms' preferred action if they face defaults, breaches of contract and dispute settlements. To form this additive index, we assigned a value of 1 wherever the firm chose to settle matters through courts or other legal mechanisms; and a value of 0 for any other recourse. The survey provided various options to choose from, ranging from negotiations with the counterparties to involving intermediaries to legal recourse. Thus, the value of the ROL index can range between 0 and 3. Figure 1 shows the relative frequency distribution of the survey firms across the possible values of the index.

For over 80% of surveyed firms the value of the index is zero. Further, the relative frequency declines monotonically in the value of the index. We also find that the ROL index does not vary much across key firm characteristics (sales, number of employees, assets size, and age): the average value of the ROL index is the same across different groups sorted by each of the firm characteristics, and the median

value of the index is always zero. These patterns clearly demonstrate that SMEs in India rely little on the legal system. Alternative channels of dispute resolution evidently play a far more important role for the SME firms.[27] The same finding also comes through in responses to other questions. About 50% of the firms do *not* have a regular legal adviser; among the other half, less than 50% of these firms have advisors with a law degree or a license to practice law. When pressed for a reason, 63% of respondents who did not have legal advisors claimed they did not need lawyers as they knew all their business partners and could deal with them directly and fairly. Clearly, the legal system takes a back seat while reputation, trust and personal relationships are the driving factors in screening counter-parties to do business with.

Legal and Non-legal Deterrence

The inverse of reliance on law, which determines whether a firm seeks legal recourse to redress a breach of contract and other disputes, is concern for legal deterrence that may prevent it from perpetrating similar breaches itself. Our survey findings indicate that legal sanctions are far less important to the SMEs than the demands and responsibilities of the informal networks within which they exist and function. For instance, in the case of default on a payment, the primary concern is loss of reputation (2.48 on a scale of 1-3), followed closely by loss of property (2.45). In the case of a breach of contract also, loss of future business opportunities ranks the highest (2.58), followed by loss of reputation (2.46). Significantly, in both types of violation, the fear of legal consequences (adverse court sentence or jail term) is the *least* important concern (1.54 for default, 1.44 for breach of contract). Even threat to personal safety ranks higher than legal consequences (1.65 and 1.57 respectively). Clearly, violation of the "unwritten rules" of the networks in which these businesses operate can result in more serious penalties, including lost opportunities and physical harm, than legal consequences. Reputation and trust are pivotal for survival and growth in this environment.

To capture these results systematically, we construct a "Legal Deterrence" (LD) index. The index combines the responses to the question probing the respondents' concern for legal penalty (being

[27] However, the courts, while not the most popular method of dispute resolution, appear to have their utility as a negotiating tool. When asked what a firm does to ensure payment or repayment (more than one response allowed), about 59% replied that they would go to court while leaving negotiation possibilities open.

sentenced by court) if *their* own firms were in violation of contracts. For each question the respondents rated their concern for legal penalty, on a 1-3 scale (1 = not concerned at all; 2 = somewhat concerned; 3 = very concerned). Thus the value of the LD index for a firm can range between 1 and 3. Panel A of Figure 2 shows the relative frequency distribution of the index. Over half (52%) of the respondents are not concerned at all about the legal consequences of a breach of contract, while less than 10% are very concerned. Thus, while legal deterrence is not completely absent among the SME firms in our sample its effectiveness is very limited. Note that, as with reliance on law, the relative frequency declines monotonically in the value of the index.

To analyze this issue further, we compare the effectiveness of legal deterrence with that of non-legal deterrence. We construct a Non-Legal Deterrence (NLD) Index by using the responses to the same question that is used for the LD index. For this index, the ratings for five non-legal concerns (loss of reputation, loss of business in the same geographic area, loss of business in another geographic area, future financing difficulty, and fear of personal safety) on a 1-3 scale (1 = not concerned at all; 2 = somewhat concerned; 3 = very concerned) are considered. We average the ranks of the five concerns. Note that not all respondents ranked all the five concerns. Thus, the value of the NLD index ranges from less than one to 3. Panel B of Figure 2 presents the relative frequency distribution of the index.

Similar to the ROL index, we do not find the values of the LD index varies much across key firm characteristics (sales, number of employees, assets size, or age): the average value of the LD index is the same across different groups for all firm characteristics; further, the median value of the index is always 1, the lowest value possible. The evidence demonstrates that the Indian SMEs are little concerned about legal deterrence. On the other hand, the median value of the NLD index is 2 for each firm characteristic, with the mean between 2 and 3. We performed a Wilcoxon-Mann-Whitney test on the LD and NLD indices for all respondents in our sample (181 observations for the LD and 205 for the NLD index). The test rejects the null hypothesis that the means of the two indices are the same (z statistic –7.22 and $p < 0.0001$). Clearly, non-legal concerns are far more effective than legal deterrence in preventing defaults

and contract violations.

The picture that emerges from our SME sector surveys indicates that the sector has little confidence in the legal system. It relies little on the courts in settling disputes and enforcing contracts and is also not much concerned about legal consequences of infractions. Non-legal sanctions, on the other hand, are far more effective. This result appears to hold for all surveyed firms regardless of their sales, asset size, age, and employee strength.

IV.2 Financial Environment

Financing during Start-up and Growth Phases

The picture of the legal environment for the SME sector above does not appear conducive to arms-length financing through markets or even relationship-based financing through banks. Both forms of finance require formal contracts, and effective legal mechanisms to enforce the contracts and deter infractions. In the case of bank loans, poor legal enforcement of contracts such as loan covenants can considerably weaken banks' ability to monitor borrowers, which is typically assumed in theories of bank lending (e.g., Rajan, 1992) and holds generally in practice in developed economies. Consequently, we should expect alternative channels of external finance, based on familiarity, social norms and other nonlegal mechanisms, to dominate the external financing of SMEs in India.

We analyze our survey results to gauge the importance of alternative finance for an SME. As noted above, alternative finance includes all external sources beyond markets and banks, such as friends and family financing and trade credits. Our survey responses indicate that in most cases such finance is not backed by any formal contract. For each respondent firm, we create a Proportion of Alternative Finance (PAF) index based on its responses to a question about the proportion of different sources of funds in the total funds. The question called for rating the sources on a scale of 1 to 4 (1 = least important or less than 10% of total financing, 4 = extremely important or more than 50% of total financing). We average the ratings of family and friends and trade credit to form the PAF index. The index ranges from 1 to 4, with higher values indicating a greater proportion of alternative finance. For our analysis,

institutional finance comprises sources of external finance that include banks, private credit agencies and individuals, government funding and venture capital for the start-up phase, short-term and long-term bank credit, loans from specialized lending institutions like SIDBI and SFC.[28]

Figure 3 depicts the relative importance of institutional and alternative finance in the start-up phase and the ease of accessing in the growth stage. It is evident from the figure that funding from alternative sources is far more important in the start-up stage and is considerably more accessible in the growth stage. While 85% of the respondent firms consider friends and family finance extremely important in the start-up phase and 86% in the growth phase, the corresponding numbers are 15% and 17% for bank finance. Of the 199 respondents who answered the query, 22% had no bank/financial institution credit. 48% of the respondents had loans from only one institution (indicating that bank credit could be relationship-driven), 14% had accounts with two banks or intermediaries, while only 2% had loans from three institutions. These results are consistent with our findings from the Prowess sample that (unlisted) SMEs get as much as 55% of their funding from alternative sources.

Determinants of the Proportion of Alternative Finance

To understand the obstacles that SMEs encounter in obtaining institutional finance, we define and use two different indices. Our first index for requirements for institutional finance, the REQ Index, is based on the responses to the survey question asking the respondent firm to enlist the necessary conditions for accessing bank finance. We form an additive index for each firm. The index ranges from 0 to 6: a score of 6 indicates that the firm listed 6 requirements needed to improve their chances of accessing bank finance, a score of 5 indicates 5 requirements, …, and 0 indicating no requirement.[29] A higher value of this index, therefore, represents greater requirements for institutional finance.

[28] The Small Industry Development Bank of India (SIDBI) is a specialized financial institution created by the government of India for financing and promoting growth in the small scale sector. State Finance Corporations (SFCs) are state-level government financial institutions created for financing and promoting growth, often in the small scale sector. We exclude foreign and expatriate funding due to low response rates; the respondents who do report these sources rate these sources much lower than other sources in terms of importance.

[29] Our survey questionnaire asked how many of the five factors would facilitate obtaining a bank loan: profitability and growth opportunities, size, whether the firm operates in "protected" industries, business connections with government officials, and political/personal connections with government officials. Respondents also mentioned other factors like "reputation of firm." In all, the maximum number of these factors was seven.

Our second index for difficulty in accessing institutional finance, DIFF Index, is based on the responses to the survey question about the level of difficulty in accessing different *types* of institutional credit: (i) short-term bank loans, (ii) long-term bank loans, and (iii) loans from specialized institutions such as SIDBI and SFC's. The respondent firms were asked to rate the three types independently on a scale of 1 to 4, (1 = very easy; 4 = very difficult). We form an average index from the ratings, ranging from 1 to 4 for each firm. A higher value of this index indicates *greater* difficulty in accessing finance from banks and specialized institutions.[30] Though higher values of both REQ and DIFF variables indicate greater hurdles in obtaining bank finance, they capture different aspects of access to institutional finance. The sample correlation coefficient between the two variables is only 0.04.

Do Indian SMEs seek alternative finance as a matter of choice, or because they have restricted access to institutional finance? We use Ordered Probit regressions to address this question, since our survey-based data on the proportion of alternative finance are categorical rather than continuous. Specifically, the PAF index is the dependent variable and the REQ index is the key independent variable. If alternative finance is sought because a firm's access to institutional finance is restricted because, among other factors, information asymmetry and uncertainty of the firm, then we should expect a positive relationship between the degree of difficulty to obtain institutional finance and the proportion of alternative finance used by the firm. On the other hand, if alternative finance is obtained as a matter of choice, then we should not expect a significant relationship between the two variables.

In Panel A of Table 10, the dependent variable is the proportion of alternative finance (as percentage of total funds) in the start-up phase, divided into four categories with a higher value indicating a higher proportion. The independent variables include the REQ index, firm size (sales) at start-up and the number of employees.[31] The coefficient for the REQ index is positive and significant at 5% in all three models. On the other hand, the level of dependence on alternative finance appears to decline with firm

[30] For example, if a firm rated short-term bank loans a '2,' long-term bank loans a '3' and loans from specialized institutions a '4,' the index of difficulty in accessing institutional finance is 3 = [(2+3+4)/3].

[31] For the level of sales (SALES), the survey responses fall in five categories. We group these responses into three categories relative to the median: below the median (a score of 1), at the median (a score of 2), and above the median (a score of 3). The employee size (EMP) variable is coded analogously.

size, proxied by sales and the number of employees, suggesting that it is easier for larger firms to secure institutional finance even at the start-up phase. These results are consistent with our finding from the *Prowess* sample that larger firms seek less alternative finance, and are consistent with the hypothesis that the reliance on alternative finance is the result of limited access to institutional finance.

In Panel B of Table 10, we examine whether the SMEs that depend on alternative finance in the start-up phase continue to use it as the main source of funds in their growth phase, or whether, as they mature, transit successfully toward institutional and market-based financing channels. On the one hand, as a firm grows larger and matures, it faces a smaller degree of information asymmetry and uncertainty compared to its start-up phase, and accordingly may have easier access to banks and markets. On the other hand, if the firm has built long-term relationships with the investors and other business partners during the start-up phase, it may find alternative finance to be the less costly channel for capital.

In Panel B, the dependent variable is the DIFF index for firms in their growth phase, divided into 4 categories, with a higher value indicating greater difficulty in accessing institutional finance. Since we consider only firms older than 5 years, this requirement truncates our original sample of 203 to 159.[32] While the difficulty in accessing institutional finance during the growth phase is somewhat eased for large firms (coefficient of the number of employees is significant at 10% in models 3 and 4; but not significant for the log of firm age variable), the difficulty level is significantly positively related (at 1% level) to the dependence on alternative financing (PAF index) during the start-up stage. This last result can be interpreted as a 'stickiness' or persistence of alternative financing for SME firms over time, which can also explain the very large proportion of alternative finance used in total funding in the case of the *Prowess* firms that we studied before. The persistence in using alternative finance is consistent with the hypothesis that alternative finance is actually the preferred funding choice for the firms. However, it does not contradict the hypothesis that alternative finance only picks up the slack of institutional finance, because the firms that rely on alternative finance during their growth phase may be the ones that have not

[32] We have conducted robustness checks on this result by considering firms older than 10, 15, and 20 years (where the sample size becomes 60). In all models, the PAF index remains positive and significant at the 1% level.

evolved into large and safe borrowers to secure institutional credit. In the next section we examine whether the access to institutional finance leads to higher firm growth, which can shed more light on the comparisons of different financing channels.

IV.3 Comparison of Survey Findings in New Delhi and Hyderabad Regions

As a final note of this section, we compare the survey findings from the two regions. The SME units in the two regions were surveyed independently. The surveys present a largely similar and consistent picture of SME financing and governance, inspiring confidence in our results. However, there are a few important differences. Average values of both the reliance on law (ROL) and the legal deterrence (LD) indices are lower for the New Delhi area firms (the difference is only marginally statistically significant for the ROL index and significant for the LD index). Consistent with this fact, the proportion of alternative finance (PAF) index is (statistically) significantly higher for the New Delhi area firms. Further, both friends and family financing (in start-up as well as growth phases) and trade credits appear to be more important for the New Delhi respondents than for those in Hyderabad. On the other hand, bank loans and reinvestment of profits are more common for Hyderabad firms. These findings indicate considerable regional differences in the nature of SME financing and effectiveness of legal mechanisms *within* India. In our firm-level finance-growth analysis below, we use both state dummy variables and a set of financial, economic and institutions development variables to capture these regional variations.

V. Financing Channels and Firm Growth

Our aggregate-level and firm-level analyses, including comparisons with other countries and surveys of SME firms, have generated two main findings thus far. First, the legal system and financing through capital markets have played limited roles in the Indian economy, despite the long history of development and the sophistications of these institutions. Second, alternative finance, backed by nonlegal mechanisms and particularly important for SMEs, has filled the gap between the vast and fast-growing economy and the underdeveloped banks and markets along with inefficient legal institutions.

These findings also raise important questions regarding the role of different financing channels, backed by mechanisms within and outside the legal system, in supporting growth at the firm- and economy-levels. The predominant view, as illustrated in cross-country (e.g., Beck et al. (2005, 2008)) and within country studies (e.g., Ayyagari et al. (2009)), is that, first, despite limited supply of market and bank finance in developing countries due to underdeveloped legal and other institutions, is the preferred form of finance; and second, the higher-quality firms (e.g., large and more profitable firms with higher growth potential and lower risk) with access to banks and markets grow faster than the rest of the firms.

The starting point of a different view on alternative finance is the role of legal institutions. In developed countries such as the U.S., these institutions have generally been viewed as facilitating the roles of markets and banks in providing funds for corporate sectors and allocating resources in the economy. However, the same cannot be said for many developing countries. As mentioned earlier, corruption and inefficiency in the government and legal institutions are regarded as one of the main hurdles for conducting business in India. In fact, an influential strand of recent research (e.g., Rajan and Zingales (2003a,b); Acemoglu and Johnson (2005)) shows that legal institutions can be 'captured' by vested interest groups, and their rent-seeking behaviors can deter innovations and competition and slow down economic growth. We expect these political economy problems to be much worse in developing countries, and given the enormous costs of building good legal institutions, these problems are not likely to go away for an extended period of time.

During early stages of economic growth, how can the political economy costs associated with legal institutions be reduced? Allen and Qian (2010) argue that, alternative finance, by operating outside the legal system, can minimize these costs as compared to financing through banks and markets. In a fast-growing economy like India, characterized by frequent changes in finance, commerce and the entire economy, they argue that this alternative system has an additional advantage, in that it can adapt and change much more quickly than when the law and legal system are used. In particular, competition can ensure the most efficient mechanism prevails and this process does not require persuading the legislature

and the electorate to revise the law when circumstances change. Applying these ideas to specific financing channels, recent research in both developed and developing countries finds that while the initial fixed costs of alternative finance such as trade credits are high, once a vertical and/or horizontal network of firms, customers, suppliers and investors is forged, the average costs over an extended period may be lower than the costs of bank and market finance that is based on arms-length relationships (e.g., Giannetti et al. (2007); Giannetti and Yu (2007); Kim and Shin (2007)).

In summary, there are two different views regarding whether alternative finance is as conducive as bank and market finance in supporting growth. The 'predominant' view states that firms with access to bank and market finance are of superior quality and they will grow faster than the rest of the firms relying only on internal and alternative finance. By contrast, the 'alternative' view states that in a fast-growing economy, alternative finance, backed by nonlegal mechanisms, can actually be superior to bank and market finance, backed by the legal system. In our empirical tests, the null hypothesis, based on the predominant view, is that the access to bank and market finance is associated with higher firm growth rates. More specifically, in firm growth regressions, the coefficients on market and bank financing variables should be positive and significant according to the null. Rejecting the null would imply that bank and market finance is not necessarily superior to alternative finance for Indian firms.

V.1 Empirical Tests

For firm-level analysis on finance and growth, we need financing and growth data for a large panel of firms (along with detailed financial and accounting information) over an extended period. As mentioned above, the only data set that meets these requirements for Indian firms is the *Prowess* database. We consider all the SMEs and all the large firms in manufacturing and services sectors covered by the *Prowess* database during the ten year period of 1996-2005. We employ two approaches: A balanced-panel approach in which only the firms that appear in the dataset for all ten years are included in the analyses, and an unbalanced-panel approach that allows firms with only a subset of years' observations to enter the analyses. We first briefly present the results from the balanced panel analysis (results *not*

reported in tables). Beginning in 1996, we track sales information for a total of 2,365 firms and assets information for 2,567 firms for each of the ten years through 2005. We sort firm size by both the SME-Large Enterprise (LE) grouping and by the size of total assets in the initial year (1996). In terms of the compound annual growth rates (CAGRs), these Indian firms recorded an impressive 10.9% annual (average) rate in sales. Further, the average SME firm grew at a CAGR of 13.1% compared to a CAGR of 8.5% for the average large enterprise, and the difference is statistically significant at the 1% level; and small firms (defined by different initial size cutoffs) grow faster than large firms. The dominance in growth (in both assets and sales) of small firms over large firms also holds in shorter time horizons and in regressions controlling for firm characteristics and location (state dummies).

Since small firms rely more on alternative finance than large firms, our evidence indicates that small firms are not hindered by the lack of access to banks and markets; in fact, they have grown much faster than large firms with an easier access to these financing channels. These results are inconsistent with the 'predominant' view on the inferiority of alternative finance. However, the balanced panel approach may suffer a survivorship bias – if small firms 'disappear' from the database more frequently than large firms *and* the firms drop out due to poor performance, our results can be driven by the fact that the 'surviving' small firms (in the data for ten years) are the best and do not represent the 'average' small firm in the economy. In this regard, we do find that the smaller the size of the firm, the more likely it will disappear from the database. Therefore, a perhaps more reliable way to analyze the data is the unbalanced-panel approach.

In order to calculate a firm's growth (in sales), we need at least two consecutive years' data for the firm. This requirement results in a total of 33,000 to 41,000 firm-year observations (over 14,000 unique firms) during 1996-2005 depending on the availability of other variables. Table 11 presents results from panel regressions with industry (18 classifications), year and firm location (state) fixed effects and sales growth (in percentage) as the dependent variable. The main variables of interest are access to bank and market finance indicators. The listing dummy equals one if a firm is publicly listed at the beginning

of a given year. Following the standard approach, we use *lagged* bank finance dummies, which equal one if a firm has at least one bank loan one, two or three years prior to the current year, to measure the effects of bank finance. Similar to Table 6, we include firm size (log of assets at the beginning of a year) and age (log of one plus firm age), and both a regional financial development (per capita bank credit) and an overall economic development variable (per capita GDP) as controls. Once again, we cluster standard errors of all firms from the same state to allow for possible dependence of error terms across firms.[33]

From Table 11, while the growth for more mature firms is lower than younger firms, larger firms have shown higher growth rates than smaller firms, a result that can be explained by the fact that small firms are more likely to drop out of the database due to poor performance. More importantly, there is no positive and significant relation between the access to the stock market and firm growth; in fact, in most models we observe a negative and significant relation between the two. Similar results are found for bank financing – while the coefficient on the one-year-lag bank finance dummy is positive in Models (1) and (4), it is not economically or statistically significant; moreover, there is a negative and significant relation between two- and three-year-lagged bank finance indicators and firm growth. We found some evidence that bank finance have a relatively more positive impact on large and older firms (the coefficient on the interaction between bank finance dummies and size and age variables is positive and significant) than for small and younger firms, but we do not find the impact of bank finance on listed firms to be different from that on unlisted firms. When we include all the bank financing indicators during the past three years (Model 13), we also observe an overall negative association between bank finance and firm growth.

A potential problem with the OLS estimates on the effects of bank and market finance on firm growth lies in the fact that the use of any particular form of financing channel is endogenously determined by the firms. This endogenous selection process therefore may bias the OLS estimates. To control for this potential self-selection bias, we employ a two-stage least square (2SLS) procedure with instrument variables (IVs). In the first stage (OLS) the dependent variable is whether a firm has bank finance in a

[33] We winsorize all continuous (dependent and explanatory) variables at the top and bottom 1%. We also run the tests in Tables 11 and 12 without winsorizing observations and obtain almost identical results, and hence our results are not driven by outliers.

previous year (0 or 1), and the instruments are the number of bank branches per firm and available bank credit per firm in a given year (with different lags) in a given state. These credit supply variables should be strongly positively correlated with the likelihood of a firm has access to bank credit, but they should not be directly linked to higher sales growth of the firm, which ought to be determined by factors such as the operations of the firm as well as market demand conditions. We also include firm size, age and an indicator for listed firms as controls. In the second stage (OLS), the dependent variable is firms' sales growth rates (in %), with the predicted value on the bank finance indicator (from the first stage) as the main explanatory variable. In both stages we include state, year and industry fixed effects.

The results are summarized in Table 12. In the first stage, the number of bank branches per firm is significantly positively correlated with firms' access to bank finance (significant at 5% in Column 1 and 1% in Columns 3 and 5), so are the two- and three-year lagged bank credit (per firm) variables (significant at 1% level in Columns 3 and 5). The *F*-statistics in all three first-stage models (Columns 1, 3 and 5) are significantly higher than conventional levels.[34] In addition, the Hansen *J*-statistics (and its p-values in Columns 2, 4 and 6) indicate that the instruments are not correlated with the error terms in the second stage. All these results confirm the validity of the instruments. After controlling for the potential self-selection bias, we do not find a positive and significant relation between bank finance and firm growth (the coefficient in Columns 2 and 4 is negative).

To summarize, our results, from both the pooled OLS and the 2SLS-IV that account for the potential survivorship bias (among small firms) and the self-selection bias (in the choice of bank finance), reject the null hypothesis based on the predominant view. Therefore, the positive impact of bank (and market) finance on firm growth observed in other studies does not apply to India. Instead, firms that rely on alternative and internal sources alone do no worse than those with access to markets and banks.[35]

[34] Further, both the Kleibergen-Paap and Stock-Yogo tests strongly reject (weakly reject) the hypothesis that the two banking variables are weak instruments in Columns 3 and 5 (Column 1) in the first stage. See, e.g., Wooldridge (2005, Chapter 15) and Stock, Wright and Yogo (2002), for more details on instrument variables and related tests.

[35] Using similar data sets and classifications based on U.S. industries in Rajan and Zingales (1998), Oura (2008) finds that industries that are more external finance-dependent grow more slowly in India. She attributes this result to the lack of funding from the banking sector to these industries.

V.2 Discussions on Alternative Finance and Growth

We provide some brief discussions on alternative finance and its impact on firm growth. First, our country- and firm-level evidence, especially the survey evidence, suggests that the fast-growing SME sector in India depends overwhelmingly on nonlegal mechanisms based on reputation, trust, and relationships to settle claims and disputes. This is consistent with firm-level findings elsewhere in the world.[36] In addition, many Indian firms, and especially those in the SME sector, are family-controlled, consistent with the experience of other counties with weak investor protection.[37] Second, we find many Indian firms, and in particular, the SME sector relies heavily on alternative financing channels, including friends and family as well as trade credit, to fund operations and growth.[38] Based on the analysis of surveyed SME firms, we find that firms that find institutional finance more difficult to access are more likely to obtain a greater proportion of their funding from alternative sources including trade credits. We also find 'stickiness' in the use of alternative finance as firms mature.

More importantly, the combination of family control and dependence on nonlegal mechanisms and alternative finance has not hindered growth for Indian firms. Thus, alternative finance may actually be the preferred choice over bank and market finance, at least for some firms. This is in contrast to the findings of previous studies, which document the limitations of nonlegal mechanisms and alternative finance and that the access to legal institutions along with markets and banks has a positive impact on growth. Consistent with our findings, Allen, Qian and Zhang (2011) document that other successful East Asian economies, such as Japan, Taiwan, and South Korea, generally conducted commerce and finance outside the legal system during their high-growth period, and McMillan and Woodruff (1999a, b) document similar findings in Vietnam, another fast-growing Asian country. On the other hand, Franks,

[36] For example, looking at private equity contracts, Lerner and Schoar (2005) find that investors and firms rely more on out-of-courts settlements to resolve control issues and agency problems in (developing) countries with weak enforcement institutions. Also see Greif (1989, 1993) for analysis of traders' organizations in the eleventh century in Italy, Banerjee and Duflo (2000) in the Indian software industry, and Spagnolo (1999) for a theoretical analysis.

[37] See Burkart et al. (2003) for a theory on the degree of insider control and the development of legal system, Khanna and Palepu (2000), Khanna and Yafeh (2005), and Gopalan et al. (2007)) for evidence of family firms and business groups in India.

[38] For additional studies on trade credits, see McMillan and Woodruff (1999a) and Berger and Udell (1998) document the role of trade credit for firms in Vietnam and the U.S., respectively.

Mayer and Wagner (2006) and Franks, Mayer and Rossi (2009) examine and conclude that the development of formal laws and regulations had little impact on the evolution of corporate ownership structures in Germany and the U.K. in the 19th and 20th centuries; financial development in these countries during these high-growth period relied mostly on trust and informal relationships among investors, firms and financial intermediaries. Overall, the findings from our paper on India, along with those from other economies, support the arguments in Allen and Qian (2010). They stipulate that in fast growing economies like India, alternative finance, by not using the legal system, can minimize the many costs associated with legal institutions and better adapt to changes than legal institutions.

It is important to note that we are not claiming developing financial markets and financial and legal institutions is not an important task for any developing country. While alternative finance and nonlegal mechanisms may be better suited for dynamic, fast-growing economies, Allen and Qian (2010) also argue that conducting finance and commerce based on the law and supported by legal institutions is optimal in static environments with slower and predictable growth. New and imaginative research is necessary to further test these hypotheses and discover the best possible combination of different financing methods at various stages of economic growth.

VI. Summary and Concluding Remarks

One of the largest and fastest growing economies in the world, India has a special place among the countries studied in the law, institutions, finance, and growth literature. Despite its English common-law origin and British-style judicial system and democratic government, we find that the effective level of investor protection and the quality of legal institutions in India are poor. We also examine the legal and business environment in which Indian firms operate and compare our results to those from other countries. We conduct our analysis using extensive datasets, including aggregate country-level data, large firm-level samples, and our own surveys of small and medium Indian firms. Our framework is broader than most previous studies, by including not only legal mechanisms and financing channels from stock

markets and banks but also other methods to settle disputes and enforce contracts, and alternative financing channels including trade credits and finance from friends and family. We also consider the entire corporate financing system in India including both large listed firms and small and unlisted firms. In scope as well as methodologies, our paper extends the existing literature.

Our paper also provides new insights on the comparison between bank and market finance versus alternative finance in supporting growth. Our empirical tests show that firms in general, and SME firms in particular, rely mostly on nonlegal deterrents, such as loss of business and reputation, and alternative financing channels to support their growth. Moreover, our results, based on both pooled OLS regressions that take into account of possible survivorship bias among small firms and a two-stage procedure with instrument variables that control for the possible self-selection bias of endogenous choice of financing channels, establish that the access to bank and market finance is not related to higher growth as found in previous studies. These results thus indicate that bank and market finance, backed by legal institutions, may not be superior to alternative finance, backed by nonlegal mechanisms, in fast growing economies such as India.

Our results have important implications for future research. Allen, Qian, and Qian (2005) find that nonlegal mechanisms and alternative financing channels, similar to those in India as documented here, have been the main driver behind phenomenal economic growth during the past thirty years in China. At the end of 2010, China and India together accounted for more than 40% of the world population and 20% of the world GDP in PPP terms. Given the status of the two countries, the findings call for more within-country (or region) studies to better understand the role of different financing channels in supporting economic growth. In particular, it will be interesting to examine under what conditions nonlegal mechanisms and alternative financing channels can support growth in environments where legal institutions are ineffective and markets and banks are underdeveloped.

Appendix

Indices and variables based on survey data

1. **Proportion of Alternative Finance (PAF):** This is an average index formed from the responses to the question asking the firm to indicate the proportion of various forms of finance in the total sources of funds, by ranking the sources on a scale of 1 to 4 (1=least important, 4=very important). These rankings in order of importance reflect the underlying proportion of the various sources to total sources of finance. We average the ranks of family and friends and trade credit to form the index of proportion of informal finance. The index ranges from 1 to 4, with higher values indicating a greater proportion of informal finance to total sources of funds.

2. **Index for requirements for formal finance (REQ)**: To construct this index, we combine the responses to the question asking the firm to enlist the necessary conditions for accessing bank finance. We form an additive index for each firm. The index ranges from 0 to 6, with 6 indicating that the firm listed 6 requirements that were needed to improve their chances of accessing bank finance and 0 indicating no requirement at all. A higher value of this index therefore, represents greater requirements for formal finance.

3. **Index for difficulty in accessing formal finance (DIFF):** For this index we combine the responses to the question asking the firm to assess the level of difficulty in accessing (i) short-term bank loans (ii) long-term bank loans (iii) loans from specialized institutions such as SIDBI and SFC's. The respondent was asked to rank these three independently on a scale of 1 to 4, (1=very easy, 4=very difficult). We form an average index from the rankings, the index ranging from 1 to 4 for each firm. E.g if the firm ranked (i) as 2, (ii) as 3 and (iii) as 4, the index of difficulty in accessing formal finance for this firm is 3 = [(2+3+4)/3]. A higher value of this index indicates a greater difficulty in accessing finance from banks and specialized institutions.

4. **Level of sales (SALES):** The firms in our sample fall under five levels of sales. We group these firms with respect to the median sales into three categories viz, (1) below median sales, (2) median sales and (3) above median sales. Thus the variable has three categories from 1 to 3, a higher number indicating a higher level of sales.

5. **Category of employee size (EMP):** We group the firms with respect to the median number of employees into three categories viz, (1) below median number of employees, (2) median number of employees and (3) above median number of employees. Thus this variable has three categories from 1 to 3, a higher number indicating a higher number of employees.

6. **Reliance on Law (ROL) Index:** To construct this index we combine the responses to three questions asking the firm's recourse in case of defaults, breach of contract (by counter-parties) and dispute settlements. The respondents were given various options to choose from, ranging from negotiations among the parties to legal recourse. To form this additive index we assigned a value of 1 wherever the firm chose to settle matters through courts or other legal mechanisms; and a value of 0 for any other recourse. Thus adding up the responses to all three questions, the minimum value of the index could be 0: this would happen when the firm did not resort to courts in any of the three questions asked. The maximum value could be 3 and this would happen if the firm chose to settle matters legally in all three questions. Thus the value of the index can range between 0 and 3.

7. **Legal Deterrence (LD) Index:** We construct this index by combining the responses to a single question probing the respondents' concern for legal penalty (being sentenced by court) if *their* own firms were in violation of contracts. The respondents rated their concerns on a 1-3 scale (1= Not concerned at all; 2 = somewhat concerned; 3 = very concerned). Thus the value of the "Legal Deterrence" Index can range between 1 and 3.

8. **Non-Legal (NLD) Index**: We construct this index by using the responses to the same question that is used for the LD index. For this index, the ratings for five non-legal concerns (loss of reputation, loss of business in the same geographic area, loss of business in another geographic area, future financing difficulty, and fear of personal safety) on a 1- 3 scale (1 = not concerned at all; 2 = somewhat concerned; 3 = very concerned) are considered. We average the ranks of the five concerns. Note that not all respondents ranked all the five concerns. Thus, the value of the NLD index ranges from less than 1 to and 3.

References

1. Acemoglu, Daron, and Simon Johnson, 2005. "Unbundling Institutions," *Journal of Political Economy*, 113 (5), 949-995.
2. Allen, Franklin, and Jun Qian, 2010. "Comparing Legal and Alternative Institutions in Finance and Commerce," Ch. 8 (pp. 118-144) in *Global Perspectives of Rule of Law*, edited by J. Heckman and R. Nelson, Routledge, New York.
3. ____, ____, and Meijun Qian, 2005. "Law, Finance, and Economic Growth in China," *Journal of Financial Economics* 77, 57-116.
4. ____, ____, and Chenying Zhang, 2011. "An Alternative View on Law, Institutions, Finance and Growth," Working Paper, Boston College and University of Pennsylvania.
5. Ayyagari, Meghana, Asli Demirgüç-Kunt and Vojislav Maksimovic, 2009. "Formal versus Informal Finance: Evidence from China," forthcoming, *Review of Financial Studies.*
6. Banerjee, Abhijit V., and Esther Duflo, 2000. "Reputation Effects and the Limits of Contracting: A Study of the Indian Software Industry," *Quarterly Journal of Economics* 115, 989-1017.
7. Bearak, B., 2000. "In India, the Wheels of Justice Hardly Move," *New York Times*, World (1 June).
8. Beck, Thorsten, Asli Demirgüç-Kunt and Ross Levine, 2005. "SMEs, Growth and Poverty: Cross-country Evidence," *Journal of Economic Growth* 10, 199-229.
9. ____, ____, and Vojislav Maksimovic, 2005. "Financial and Legal Constraints to Firm Growth: Does Size Matter?" *Journal of Finance* 60, 137-177.
10. ____, ____, and ____, 2008. "Financing Patterns around the World: Are Small Firms Different?" *Journal of Financial Economics* 89, 467-487.
11. ____, Erik Feyen, Alain Ize and Florencia Moizeszowicz, 2008. "Benchmarking Financial Development," World Bank Policy Research Working Paper 4638.
12. Berger, Allen and Gregory Udell, 1995. "Relationship Lending and Lines of Credit in Small Firm Finance," *Journal of Business* 68, 351-381.
13. ____, and ____, 1998. "The Economics of Small Business Finance," *Journal of Banking and Finance* 22, 613-673.
14. Berkowitz, Daniel, Katharina Pistor and Jean-Francois Richard, 2003. "Economic Development, Legality, and the Transplant Effect," *European Economic Review* 47, 165-195.
15. Burkart, Mike, Fausto Panunzi and Andrei Shleifer, 2003. "Family Firms," *Journal of Finance* 58, 2167-2201.
16. Chakrabarti, Rajesh, 2006. *The Financial Sector in India – Emerging Issues*, Oxford University Press, New Delhi.
17. Claessens, Stijn, Simeon Djankov, and Larry Lang, 2000. "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics* 58, 81-112.
18. ____, ____, Joseph Fan, and Larry Lang, 2002. "Disentangling the Incentive and Entrenchment of Large Shareholdings," *Journal of Finance* 57, 2741-2771.

19. Coase, Ronald, 1937. "The Nature of Firm," *Economica* 4, 386-405.
20. Debroy, Bibek, 2000. "Some Issues in Law Reform in India" in Jean-Jacques Dethier (ed.) *Governance, Decentralization and Reform in China, India and Russia*, Boston: Kluwer Academic Publishers, 339-368
21. Djankov, Simeon, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2003. "Courts," *Quarterly Journal of Economics*, 118, 453-517.
22. ____, ____, ____, and ____, 2008. "The Law and Economics of Self-Dealing," *Journal of Financial Economics* 88, 430-465.
23. ____, Caralee McLiesh, and Andrei Shleifer, 2007. "Private Credit in 129 Countries," *Journal of Financial Economics* 84, 299-329.
24. Demirgüç-Kunt, Asli, and Vojislav Maksimovic, 1998. "Law, Finance, and Firm Growth," *Journal of Finance* 53, 2107-37.
25. ____, and Ross Levine, 2001. *Financial Structure and Economic Growth: Cross-country Comparisons of Banks, Markets, and Development*, MIT Press, Cambridge, Massachusetts.
26. Franks, Julian, Colin Mayer and Stefano Rossi, 2009. "Ownership: Evolution and Regulation", *Review of Financial Studies* 22, 4009-4056.
27. ____, ____, and Hannes Wagner, 2006. "The Origins of the German Corporation – Finance, Ownership and Control," *Review of Finance* 10, 537-585.
28. Giannetti, Mariassunta, Burkart, Mike, and Tore Elligensen, 2007. "What You Sell is What you Lend? Explaining Trade Credits Contracts," forthcoming, *Review of Financial Studies*.
29. ____, and Xiaoyun Yu, 2007. "Connections and Information Acquisition in Capital Allocation," ECGI - Finance Working Paper No. 153/2007.
30. Gopalan, Radhakrishnan, Vikram Nanda, and Amit Seru, 2007. "Affiliated Firms and Financial Support: Evidence from Indian Business Groups," *Journal of Financial Economics* 86, 759-795.
31. Graham, John, and Campbell Harvey, 2001. "The Theory and Practice of Corporate Finance: Evidence from the Field," *Journal of Financial Economics* 61, 1-35.
32. Greif, Avner, 1989. "Reputation and Coalitions in Medieval Trade: Evidence on the Maghribi Traders," *Journal of Economic History* 49, 857-882.
33. ____, 1993. "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition," *American Economic Review* 83, 525-548.
34. Holderness, Clifford, 2009. "The Myth of Diffuse Ownership in the United States," *Review of Financial Studies*. 22, 1377-1408.
35. Jayaratne, Jith and Philip E. Strahan, 1996. "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation," *Quarterly Journal of Economics* 111, 639-70.
36. Johnson, Simon, John McMillan, and Christopher Woodruff, 2002. "Property Rights and Finance," *American Economic Review* 92, 1335-1356.
37. Khanna, Tarun, and Krishna Palepu, 2000. "Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups," *Journal of Finance* 55, 867-891.

38. ____, and Yishay Yafeh, 2005. "Business Groups and Risk Sharing around the World," *Journal of Business* 78, 301-340.
39. Kim, Se-Jik, and Hyun Song Shin, 2007. "Industrial Structure and Corporate Finance," working paper, Princeton University.
40. King, Robert, and Ross Levine, 1993. "Finance and Growth: Schumpeter might be Right," *Quarterly Journal of Economics* 108, 717-738.
41. La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer, 1999. "Corporate Ownership around the World," *Journal of Finance*, 54, 471-517.
42. ____, ____, and ____, 2006. "What Works in Securities Laws?" *Journal of Finance* 61, 1-32.
43. ____, ____, ____, and Robert Vishny, 1997. "Legal Determinants of External Finance," *Journal of Finance* 52, 1131-1150.
44. ____, ____, ____, and ____, 1998, "Law and Finance," *Journal of Political Economy* 106, 1113-55.
45. ____, ____, ____, and ____, 2000. "Agency Problems and Dividend Policy around the World," *Journal of Finance* 55, 1-34.
46. ____, ____, ____, and ____, 2002. "Investor Protection and Corporate Valuation," *Journal of Finance* 57, 1147-1170.
47. Lerner, Josh, and Antoinette Schoar, 2005. "Does Legal Enforcement Affect Financial Transactions? The Contractual Channel in Private Equity," *Quarterly Journal of Economics* 120, 223-246.
48. Leuz, Christian, Dhananjay Nanda, and Peter Wysocki, 2003. "Earnings Management and Investor Protection: An International Comparison," *Journal of Financial Economics* 69, 505-527.
49. Levine, Ross, 2002. "Bank-based or Market-based Financial Systems: Which is Better?" *Journal of Financial Intermediation* 11, 1-30.
50. ____, and Sara Zervos, 1998. "Stock Market, Banks, and Economic Growth," *American Economic Review* 88, 537-558.
51. Maddala, G.S., 1983. *Limited-dependent and qualitative variables in econometrics*, Cambridge Univ. Press.
52. McKinnon, Ronald, 1973. *Money and Capital in Economic Development*, Brookings Institution Press.
53. McMillan, John, and Christopher Woodruff, 1999a. "Interfirm Relationships and Informal Credit in Vietnam," *Quarterly Journal of Economics* 114, 1285-1320.
54. ____, and ____, 1999b. "Dispute Prevention without Courts in Vietnam," *Journal of Law, Economics, and Organization* 15, 637-658.
55. Oura, Hiroko, 2008. "Financial Development and Growth in India: A Growing Tiger in a Cage?" working paper, IMF.
56. Petersen, Mitchell, and Raghuram Rajan, 1994. "The Benefits of Firm-creditor Relationships: Evidence from Small-business Data," *Journal of Finance* 49, 3-37.
57. Rajan, Raghuram, 1992. "Insiders and Outsiders: The Choice between Informed and Arm's-Length Debt," *Journal of Finance* 47, 1367-1400.
58. ____, and L. Zingales, 1998. "Financial Dependence and Growth," *American Economic Review* 88, 559-586.

59. ____, ____, 2003a. “The Great Reversals: The Politics of Financial Development in the Twentieth Century,” *Journal of Financial Economics* 69, 5-50.
60. _____, and _____, 2003b. *Saving Capitalism from Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity*, Random House, New York.
61. Reserve Bank of India, 2005, “Performance of Private Corporate Sector in the Post Liberalization Period”, *Reserve Bank of India Bulletin*, November.
62. Schneider, F. and D. Enste, 2000, “Shadow Economies: Sizes, Causes, and Consequences,” *Journal of Economic Literature* 38 (1), 77-114.
63. ____, 2002. “Size and Measurement of the Informal Economy in 110 Countries around the World**,”** World Bank.
64. Spagnolo, Giancarlo, 1999, “Social Relations and Cooperation in Organizations,” *Journal of Economic Behavior and Organization* 38, 1-25.
65. Spamann, Holger, 2010. “The ‘Antidirector Rights Index’ Revised,” *Review of Financial Studies* 23, 467-486.
66. Stock, James, Jonathan Wright, and Motohiro Yogo, 2002. “A Survey of Weak Instruments and Weak Identification in Generalized Method of Moments,” *Journal of Business and Economic Statistics* 20, 518-529.
67. Stulz, Rene, 2005. “The Limits of Financial Globalization,” (Presidential address) *Journal of Finance* 60, 1595-1638.
68. Visaria, Sujata, 2009. “Legal Reform and Loan Repayment: The Microeconomic Impact of Debt Recovery Tribunals in India”, *American Economic Journal: Applied Economics* 1, 59-81.
69. Wooldridge, Jeffrey, 2005. *Introductory Econometrics: A Modern Approach*; third edition; Thomson South Western.

Table 1 The Largest 10 Economies in the World: GDP and Growth

	GDP in 2010 (simple exchange rates)		GDP in 2010 (PPP)		GDP growth: 1990-2010* (constant prices)		Per capita GDP growth: 1990-2010* (constant prices)	
Rank	Country /Region	US$ billion	Country /Region	Int'l $ billion	Country /Region	Annual growth	Country /Region	Annual growth
1	US	14,658	US	14,256	China	10.5%	China	9.6%
2	China	5,878	China	8,765	Vietnam	7.4%	Vietnam	5.9%
3	Japan	5,459	Japan	4,159	**India**	**6.5%**	**India**	**4.7%**
4	Germany	3,316	**India**	**3,526**	Angola	6.1%	S. Korea	4.6%
5	France	2,583	Germany	2,806	Sudan	5.9%	Taiwan	4.3%
6	U.K.	2,247	Russia	2,139	Malaysia	5.8%	Poland	3.8%
7	Brazil	2,090	U.K.	2,110	Bangladesh	5.4%	Thailand	3.7%
8	Italy	2,055	Brazil	2,108	Nigeria	5.3%	Chile	3.7%
9	Canada	1,574	France	2,013	S. Korea	5.3%	Bangladesh	3.5%
10	**India**	**1,538**	Italy	1,740	Chile	5.1%	Malaysia	3.5%

Source: IMF World Economic Outlook Database April 2011; *: Countries with population less than 10 million, GDP less than US$ 50 billion in 2010, or less than 15 years of GDP observations are excluded from the rankings.

Table 2 Comparing Legal Systems and Institutions

This table compares legal systems and institutions in India, LLSV country-groups (sorted by legal origins) and other large emerging economies; notation (E), (F), or (G) indicates that a country has the English, French, or German legal origin. Creditor rights scores are from DMS (2007) and Anti-director rights scores are from DLLS (2007). Corruption Perception Index values, from Transparency International (2006), range from 0 to 10, with 0 (10) meaning most (least) corrupt. Legal Formalism Index, from DLLS (2003), ranges from 0 to 7, where a higher score means greater formalism (slower courts) or a higher level of intervention in the judicial process. Legality Index, from Berkowitz, Pistor, and Richard (2003), uses five legality proxies (each range from 0 to 10) and principal components analysis to aggregate the individual legality proxies into a single legality Index; the index ranges from 0 to 21 with a higher score meaning a better legal environment. Disclosure Requirement index, from LLS (2006), is the arithmetic mean of scores (zero or one; one means disclosure required) on six dimensions of disclosure requirements: (1) Prospect; (2) Compensation; (3) Shareholders; (4) Inside Ownership; (5) Contracts Irregular; (6) and Transactions; the overall Index ranges from zero to one, with zero meaning no disclosure requirement for anything, and one meaning disclosure of everything. Earnings Management index, from Leuz, Nanda, and Wysocki (2003), is the average rank across four measures of earnings management; a higher score implies *more* earnings management.

	Creditor Rights	**Anti-Director Rights**	**Corruption Perception Index**	**Legal Formalism Index**	**Legality Index**	**Disclosure Requirement**	**Earnings Management Score**
Panel A India and Other Large Emerging Markets (EMs)							
India (E)	**2 (4)**	**5**	**3.3**	**3.51**	**11.35**	**0.92**	**19.1**
Argentina (F)	1	2	2.9	5.49	10.31	0.5	N/a
Brazil (F)	1	5	3.3	3.83	11.43	0.25	N/a
China	2	1	3.3	3.4	N/a	N/a	N/a
Egypt (F)	2	3	3.3	3.6	10.14	0.5	N/a
Indonesia (F)	2	4	2.4	3.88	8.37	0.5	18.3
Malaysia (E)	3	5	5.0	3.21	13.82	0.92	14.8
Mexico (F)	0	3	3.3	4.82	10.79	0.58	N/a
Pakistan (E)	1	4	2.2	3.74	8.27	0.58	17.8
Peru (F)	0	3.5	3.3	5.42	9.13	0.33	N/a
Philippines (F)	1	4	2.5	5.0	7.91	0.83	8.8
Russia	1	4	2.4	N/a	N/a	N/a	N/a
S. Africa (E)	3	5	4.6	3.68	11.95	0.83	5.6
Sri Lanka (E)	2	4	3.1	3.89	9.68	0.75	N/a
Thailand (E)	2	4	3.6	4.25	10.7	0.92	18.3
Turkey (F)	2	3	3.8	3.49	9.88	0.5	N/a
Average of EMs*	1.47	3.64	3.12	4.07	10.25	0.61	16.61

Panel B LLSV Country Groups							
English-origin Ave.	2.28	4.19	5.33	3.02	15.56	0.78	11.69
French-origin Ave.	1.31	2.91	4.39	4.38	13.11	0.45	19.27
German-origin Ave.	2.33	3.04	5.58	3.57	15.53	0.60	23.60
Nordic-origin Ave.	1.75	3.80	9.34	3.32	16.42	0.56	10.15
Sample Ave.	1.80[a]	3.37[b]	5.24	3.58[c]	14.98	0.60[d]	16.00

Notes: [*]: simple average of scores of other emerging market economies *without* India; [a]: DMS (2007) average; [b]: DLLS (2007) average; [c]: DLLS (2003) average; [d]: LLS (2006) average.

Table 3 Comparing Financial Systems: Banks and Markets (averages over 2001-2007)

This table compares India's financial markets and banking sector with those of other large emerging countries and LLSV country groups (sorted by legal origins), using the average figures over the period 2001-2007. All the measures are based on Demirgüç-Kunt and Levine (2001) and Levine (2002), and data is from the World Bank Financial Database. The averages for the other emerging countries (excluding India) and for each of the LLSV country groups as well as all four groups are *weighted* averages with the countries' GDPs in each sample year as the weights, and then averaged over years.

	Size of Banks and Markets				**Structure Indices: Markets vs. banks[**]**				**Financial Development[***] (banking and market sectors)**		
Measures	Bank credit/ GDP	Bank NPLs / All Loans[*]	Value traded /GDP	Market cap. /GDP	Structure Activity	Structure Size	Structure Efficiency	Structure Regulatory	Finance Activity	Finance Size	Finance Efficiency
Panel A India and Other Large Emerging Markets (EMs)											
India (E)	0.37	0.07	0.57	0.64	0.44	0.56	-3.11	10	-1.56	-1.45	2.10
Argentina (F)	0.14	0.10	0.04	0.48	-1.32	1.25	-3.02	7	-5.28	-2.71	-1.01
Brazil (F)	0.34	0.04	0.19	0.53	-0.61	0.44	-3.89	10	-2.76	-1.72	1.57
China	1.16	0.16	0.62	0.64	-0.62	-0.59	-2.28	16	-0.33	-0.30	1.36
Egypt (F)	0.52	0.21	0.19	0.60	-1.02	0.14	-2.06	13	-2.33	-1.17	-0.13
Indonesia (F)	0.24	0.12	0.12	0.28	-0.69	0.16	-3.38	N/a	-3.55	-2.70	-0.01
Malaysia (E)	1.15	0.12	0.43	1.45	-0.98	0.23	-1.75	10	-0.70	0.51	1.28
Mexico (F)	0.18	0.03	0.06	0.26	-0.99	0.38	-4.87	12	-4.47	-3.10	0.77
Pakistan (E)	0.26	0.14	0.72	0.28	1.01	0.07	-3.25	10	-1.66	-2.60	1.66
Peru (F)	0.21	0.08	0.03	0.44	-1.96	0.76	-3.38	8	-5.11	-2.40	-0.97
Philippines (F)	0.34	0.15	0.07	0.47	-1.54	0.32	-2.63	7	-3.71	-1.85	-0.76
Russia	0.26	0.04	0.27	0.65	0.06	0.93	-3.65	N/a	-2.67	-1.80	1.91
S. Africa (E)	1.38	0.02	0.88	2.06	-0.45	0.41	-3.18	8	0.19	1.04	3.78
Sri Lanka (E)	0.31	0.15	0.03	0.18	-2.33	-0.55	-3.60	7	-4.69	-2.90	-1.64
Thailand (E)	1.02	0.11	0.50	0.63	-0.72	-0.47	-2.65	9	-0.69	-0.44	1.50
Turkey (F)	0.20	0.10	0.39	0.28	0.67	0.33	-3.55	12	-2.56	-2.89	1.33
Ave. for EMs	0.65	0.10	0.37	0.58	-0.61	0.08	-3.15	7.97	-2.11	-1.41	1.13
Panel B LLSV Country Groups											
English origin[a]	1.70	0.02	1.88	1.31	0.05	-0.25	-4.26	1.93	1.00	0.71	5.06
French origin	0.66	0.05	0.49	0.57	-0.65	-0.04	-3.31	8.50	-1.97	-1.36	1.71
German origin	1.54	0.04	0.85	0.71	-0.61	-0.77	-3.63	9.65	0.19	0.03	3.06
Nordic origin	1.19	0.01	1.36	1.31	0.03	0.00	-4.63	7.74	0.27	0.24	4.90
Sample Ave.	1.43	0.03	1.32	1.01	-0.26	-0.33	-3.91	8.53	0.16	0.09	3.83

Notes: [a]: the figures for the English-origin group are calculated *without* India.
[*]: Levine (2002) uses the ratio of overhead costs over assets as the measure for bank efficiency. This variable is not available in the World Bank database, and we use banks' NPLs over all loans as a substitute.
[**]: Structure indices measure whether a country's financial system is market- or bank-dominated; the higher the measure, the

more the system is dominated by markets. Specifically, "structure activity" is equal to log(value traded ratio/bank credit ratio) and measures the size of bank credit relative to trading volume of markets; "structure size" is equal to log(market cap ratio/bank credit ratio), and "structure efficiency" is equal to log(market cap ratio×bank NPL ratio) and measures the relative efficiency of markets vs. banks; finally, "structure regulatory" is the sum of four categories in regulatory restrictions, or the degree to which commercial banks are allowed to engage in security, firm operation, insurance, and real estate business: 1- unrestricted; 2 - permit to conduct through subsidiaries; 3-full range of activities not permitted in subsidiaries; and 4-strictly prohibited

***: Financial development variables measure the entire financial system (banking and market sectors combined), and the higher the measure, the larger or more efficient the financial system is. Specifically, "finance activity" is equal to log (value traded ratio×bank credit ratio), "finance size" is equal to log (market cap ratio×bank credit ratio), and "finance efficiency" is equal to log (value traded ratio/bank NPL ratio).

Table 4 Descriptive Statistics of the Prowess Sample of Firms (as of 2005)

This table provides the descriptive statistics of our sample of non-financial Indian firms in the year 2005, based on the *Prowess* database of CMIE. The table shows the breakdown between firms in the small and medium enterprises (SME) sector and large enterprises (LE), as well as between manufacturing and services sectors. It reports the maximum, median and minimum values of sales, assets and age of the firms.

Firm Category		**SME-Manufacturing**	**Large-Manufacturing**	**SME-Service**	**Large-Service**	**All SMEs**	**All Large Firms**	**All Firms**
Number of Obs.		3,373	2,723	1,815	393	5,188	3,116	8,304
Sales (Million US$)	Max	900.26	34,837.47	1,324.82	10,025.98	1,324.82	34,837.47	34,837.47
	Med.	0.83	22.82	0.17	10.62	0.49	21.47	2.94
	Min.	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Assets ($Million)	Max	2,324.28	21,098.39	1,381.39	24,937.98	2,324.28	24,937.98	24,937.98
	Med.	1.64	21.94	0.96	23.05	1.40	22.03	4.19
	Min	0	0.62	0	0.74	0	0.62	0
Firm Age (years)	Max	137	180	108	104	137	180	180
	Med.	16	21	14	15	15	20	17
	Min	0	1	0	1	0	1	0

Table 5 Sources of Funds for Non-financial Firms (*Percentage* of Total Funding; 2001-2005)

This table provides evidence on the sources of (new) funds for non-financial Indian firms during the 5-year period of 2001-2005, based on the *Prowess* database of CMIE. Panel A shows the breakdown for firms in the LE sector as well as between manufacturing and services industries and whether a firm is listed (on BSE or LSE) or not, Panel B shows similar results for the SME sector, and Panel C for all the firms using our own definitions of four financing channels. For a given category of firms, the numbers reported in the tables are obtained by first calculating the average *new* funds from each funding source during 2001-2005 for each of the firms, and then summing across all firms and expressed as the percentage of the total funds from all sources obtained during the same period. In each panel, we also report median firm size (median of fiver-year average of book value of assets of all firms) for each firm group.

Panel A Large Enterprises (LEs)

	All LEs	**LE-M**	**LE-S**	**Listed LEs**	**Unlisted LEs**	**Listed LE-M**	**Unlisted LE-M**	**Listed LE-S**	**Unlisted LE-S**
Internal Sources	46.6	47.8	43.9	58.3	34.51	60.67	28.02	46.74	42.77
Equity (Private+Public)	16.8	15.6	19.5	12.4	21.28	12.00	21.11	14.46	21.5
Capital Market-Debt	2.5	1.9	3.8	2.2	2.76	2.2	1.5	2.2	4.37
Debt: Banks and FI's	16.9	16.3	18.4	12.3	21.64	11.16	24.17	18.34	18.43
Debt: Group Co's/Promoters	1.9	2.2	1.2	-0.2	4.11	-0.2	5.93	-0.2	1.79
Trade Credits	11.2	11.7	10.0	12.0	10.35	11.68	11.85	13.83	8.44
Other Sources	4.1	4.4	3.2	2.8	5.35	2.49	7.42	4.63	2.72
Median Assets Value (in Rs. Crores)	70.37	70.55	69.76	223.16	51.19	232.24	50.73	181.76	54.62
Number of Obs.	4,760	3,899	861	1,001	3,759	837	3,062	164	697

Panel B Small and Medium Enterprises (SMEs)

	All SMEs	**SME-M**	**SME-S**	**Listed SMEs**	**Unlisted SMEs**	**Listed SME-M**	**Unlisted SME-M**	**Listed SME-S**	**Unlisted SME-S**
Internal Sources	15.11	11.04	21.45	39.49	11.16	26.99	8.47	58.69	15.35
Equity (Private+Public)	31.59	33.44	28.7	34.82	31.06	28.68	34.21	44.25	26.16
Capital Market-Debt	6.99	9.71	2.8	3.4	7.57	5.33	10.41	0.45	3.15
Debt: Banks and FI's	21.62	24.61	17.0	10.44	23.44	17.71	25.72	-0.71	19.88
Debt: Group Co's/Promoters	3.4	4.29	2.0	8.98	2.49	12.64	2.95	3.36	1.78
Trade Credits	15.83	14.11	18.51	6.89	17.28	9.4	14.87	3.03	21.04
Other Sources	5.5	2.81	9.6	-4.03	7.00	-0.74	3.38	-9.1	12.65
Median Assets Value (in Rs. Crores)	9.55	10.82	6.36	69.56	8.64	64.97	9.93	85.38	5.77
Number of Obs.	9,014	6,121	2,893	400	8,614	282	5,839	118	2,775

Table 5 (continued)

In Panel C we present results on financing patterns for all firms and for firms in both the LE and SME sectors. We aggregate all financing channels (from the Prowess database and results presented in Panels A and B) into four categories: 1) Internal sources (same as in Panels A and B): net income after dividends + depreciation + provisions or funds set aside; 2) Market finance (external financing through markets): equity (stock) and debt (bonds) raised from capital markets; 3) Bank/FI finance (external financing through banks): debt/loans from banks and other financial institutions; and 4) Alternative (external) finance: all nonmarket, nonbank external finance, including equity and debt raised from private sources including group companies, promoters and founders, trade credits, and other liabilities. As shown in Panels A and B, the breakdown of equity into publicly issued stocks (part of Market finance) and privately placed equity (part of Alternative finance) of firms is not available in the Prowess database. We classify all the equity raised by *listed* firms to be market finance, and all the equity raised by *unlisted* firms to be alternative finance.

Panel C All Firms with Four Financing Channels

	All Firms			**LEs**		**SMEs**	
	All Firms	**LEs**	**SMEs**	**Listed LEs**	**Unlisted LEs**	**Listed SMEs**	**Unlisted SMEs**
Internal Sources	45.29	46.6	15.11	58.32	34.51	39.49	11.16
Market Finance	6.47	5.47	9.98	8.09	2.76	24.87	7.57
Bank/FI Finance	18.18	18.86	25.02	12.18	25.75	19.42	25.92
Alternative Finance	30.06	29.08	49.89	21.42	36.98	16.21	55.34
Median Assets Value (in Rs. Crores)	16.40	70.37	9.55	223.16	51.19	69.56	8.64
Number of Observations	12,344	4,760	9,014	1,001	3,759	400	8,614

Table 6 Proportion of Alternative Finance: Panel Regressions using the *Prowess* Database (2001-2005)

This table presents results from panel regressions with industry (18 classifications), year and (firm) location fixed effects and proportion of alternative finance (defined in Table 5) over all finance raised in a given year as the dependent variable. In order to calculate a firm's debt figures, we need at least two consecutive years' data for the firm, but allow for different firms having different number of observations. The listing dummy equals one if a firm is publicly listed (at the beginning of a given year). The *SME* dummy equals one if a firm falls into the SME category for all the years. The ownership indicators are defined as follows: 1) "Widely-held'' firms are defined as no single large shareholder owns more than 10% of shares; 2) "State" firms are those with the controlling shareholder being the state/government; 3) "Family/Individuals" firms are those with the controlling shareholder being the founder's family; 4) "Institutions" ("Corporation") are firms with a widely-held financial (non-financial) corporation as the controlling shareholder; finally, firms with foreign individuals and entities as the controlling shareholder serve as the default group. Standard errors of all firms from the same state are clustered to allow for possible dependence of error terms. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)
ASSETS (Log of Assets)	-0.008*	-0.008	-0.008
	[0.005]	[0.005]	[0.006]
Log(1 + AGE)	0.069***	0.066***	0.064***
	[0.017]	[0.017]	[0.017]
Listing Dummy	-0.091***	-0.065***	-0.064***
	[0.020]	[0.021]	[0.022]
Log(Per Capita Bank Credit State)	-0.053	-0.053	-0.052
	[0.035]	[0.035]	[0.035]
Log(Per Capita Bank Constant GDP Prices - State)	0.122	0.128	0.142
	[0.480]	[0.475]	[0.474]
SME	0.017	0.041**	0.043**
	[0.015]	[0.018]	[0.020]
Listed SME		-0.128***	-0.117**
		[0.043]	[0.046]
Widely Held Firm			0.145
			[0.085]
State/Central Government Held Firm			0.107*
			[0.061]
Family/Individuals Promoted			0.076
			[0.058]
Non Financial Corporations Held			0.148***
			[0.050]
Financial Institutions Held			0.092
			[0.066]
Constant	-0.358	-0.415	-0.667
	[4.406]	[4.356]	[4.309]
Observations	8,378	8,378	8,378
R-squared	0.013	0.013	0.014
State FE	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES

Table 7 Comparing External Financing, Dividend, and Valuation

This table compares firm-level external financing, dividend payout and valuation of Indian firms with other country groups. For all countries other than India and for all country groups, we use the same method as in LLSV (1997a) but we re-compute the figures with World scope 2001-2005 data.* For the Indian sample, we follow their approach and take the median ratio for all firms in our Prowess sample from the same period (2001-2005).

Panel A: External Financing							
Country	English origin average	French origin average	German origin average	Nordic origin average	Sample average	**India**	
						Large Enterprises	SMEs
Market cap/Sales	1.52	0.72	1.39	0.98	0.81	0.36	0.60
Debt**/Sales	0.38	0.11	0.80	0.24	0.12	0.29	0.12
Panel B: Dividend and Valuation							
Dividend/Earnings	0.21	0.17	0	0.35	0.128	0.00	0.00
Dividend/Sales	0.017	0.055	0	0.02	0.008	0.00	0.00
Tobin's Q	1.56	1.06	1.51	1.77	1.04	0.71	0.57
# of observations	10,192	2,969	5,133	523	--	4,760	9,015

* In LLSV (1997a), a ratio (e.g., market cap/sales) for a given country is the median ratio in 1994 for all the firms from that country in their sample. The average ratio for a country group based on legal origin is the arithmetic average of the country ratios. ** Debt includes long-term debt only (as in LLSV, 1997a).

Table 8 Ownership Structures of Indian Firms vis-à-vis Other Country Groups

In this table we compare ownership structure of firms in India and other countries (LLSV country groups, selected Asian countries including China). Our sample of 15,111 Indian firms (panel data set for the period 2001-2005) is collected and compiled from the CMIE *Prowess* database, of which 2,735 firms' ownership data is available. The ratio of ownership type is calculated at firm*year (13,675) level for India firms.

Controlling Shareholder*	**Foreign**	**Widely-held (%)**	**State (%)**	**Family/ Indiv. (%)**	**Financial Corp. (%)**	**Non-Fin Corp. (%)**
Panel A: Indian Firms	FOREIGN/ NRI/OCB**			***a***	***b***	***c***
Full Sample	7.7	3.4	0.9	75.3	2.0	10.7
All SMEs	4.1	4.4	0.2	75.1	0.9	15.3
All Large Enterprises	11.4	2.3	1.7	75.5	3.0	6.1
BSE 500[d]	13.9	2.5	5.8	68.6	3.9	5.3
Panel B: Asian Firms						
Asia (no Japan, Claessens et al. 2000)		3.1	9.4	59.4	9.7	18.6
China (Allen, Qian, Qian 2005)		0.4	60.0	13.6	1.8	24.2
Panel C: LLS (1999) Sample of Large Firms						
High-antidirector average		34.2	15.8	30.4	5.0	5.8
Low-antidirector average		16.0	23.7	38.3	11.0	2.0
Sample average		24.0	20.2	34.8	8.3	3.7
Panel D: LLS (1999) Sample of Medium Firms						
High-antidirector average		16.7	10.3	50.9	5.8	1.7
Low-antidirector average		6.0	20.9	53.8	6.7	2.7
Sample average		10.7	16.2	52.5	6.3	2.2

Notes:
*: We list these "controlling shareholders" (% indicate fraction of sample firms having a particular type of controlling shareholder): 1) "Widely-held'' firms are defined as no single large shareholder owns more than 10% of shares; 2) "State" firms are those with the controlling shareholder being the state/government; 3) "Family" firms are those with the controlling shareholder being the founder's family; 4) "Financial" ("Non-financial") are firms with a widely-held financial (non-financial) corporation as the controlling shareholder.
**: Non-Resident Indians (NRIs) are individuals of Indian nationality or Indian origin resident outside India. Overseas Corporate Bodies (OCBs) include overseas companies, partnership firms, societies and other corporate bodies which are owned predominantly (at least 60%) by individuals of Indian nationality or Indian origin resident outside India.
a: For these Indian firms, we identify the dominant shareholder to be private block-holders, but we are not sure how many blockholders there are and whether they are related or not.
b: For these Indian firms, we identify the dominant shareholder to be a financial company, but we are not sure whether the financial company is widely held or not.
c: For these Indian firms, we identify the dominant shareholder to be another listed and traded corporation, but we are not sure whether this corporation is widely held or not.
d: Based on 317 non-financial large firms included in the BSE 500 index.

Table 9 Survey Firms – Descriptive Statistics

The firms in the sample were selected from several industrial parks in the New Delhi (northern India) and Hyderabad (southern India) areas that provided industrially diversified clusters of firms. The clusters include the Mayapuri Industrial Area, Naraina Industrial Area, WHS Kirtinagar cluster in Delhi and Patanchera and Jeedimetla Industrial Development Areas (IDAs), the Katedan Industrial Estate and the Bharat Heavy Electricals Ltd. (BHEL) Ancillary Industrial Estate at Ramachandrapuram in Hyderabad. Interviews were conducted with the owners or top level executives of the firms in the sample. On average an interview took about 45 minutes to complete. The survey contained 36 questions (most with subparts) in four sections. The survey instrument and tabulated results are available at http://www.isb.edu/faculty/rajeshchakrabarti/india-survey.zip.

		New Delhi	Hyderabad	Combined
Number of Observations*		136	76	212
Firm Age (years)	Max.	85	38	85
	Median	21	11	19
	Min.	< 1	< 1	< 1
Total Assets (US$ million)	Max.	1.1 to 3.3	0.222 to 1.1	1.1 to 3.3
	Median	0.222 to 1.1	< 0.222	0.222 to 1.1
	Min.	< 0.222	< 0.222	< 0.222
Sales (US$ million)	Max.	> 0.222	> 0.222	> 0.222
	Median	0.0555 to 0.111	0.0555 to 0.111	0.0555 to 0.111
	Min.	< 0.0555	< 0.0555	< 0.0555
Number of employees	Max.	350	50	350
	Median	10	20	10
	Min.	2	7	2

* Number of interviews made. Numbers of responses to individual questions vary

Table 10 Ordered Probit Regressions on the Importance of Alternative Finance

Panel A: Proportion of Alternative Finance at Start-up Phase

Regressions are ordered Probits. The dependent variable is the proportion of alternative finance in start-up phase, divided into 4 categories, with a higher value indicating a higher proportion of alternative finance as a percentage of total sources of funds. Numbers in parentheses below coefficients are the standard errors for the mean coefficient estimates reported. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively. Chi-square and *p*-values are reported for every additional variable in the equation.

Independent Variables	(1)	(2)	(3)
Index for requirements for	0.1704***	0.1603**	0.2033***
Institutional finance (REQ)	(0.0653)	(0.0656)	(0.0777)
Sales Level (SALES)		-0.2805***	-0.3091***
		(0.0879)	(0.0975)
Dummy for employees (EMP)			-0.4421**
			(0.1775)
Number of observations	203	203	193
Chi-square	6.81	10.1700	6.2011
P-value	0.0091	0.0014	0.0128

Panel B: Difficulty in Accessing Institutional **Finance in Growth Phase**
(Firm age is greater or equal to 5 years)

Regressions are ordered Probits. The dependent variable is the difficulty in accessing Institutional finance in growth phase, divided into 4 categories, with a higher value indicating a greater difficulty. Numbers in parentheses are the standard errors for the mean coefficient estimates reported. *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively. Chi-square and *p*-values are reported for every additional variable in the equation.

Independent Variables	(1)	(2)	(3)	(4)	(5)
Requirements for Institutional	-0.0266	-0.0279	-0.0766	-0.0739	-0.1696*
finance (REQ)	(0.0781)	(0.0781)	(0.0896)	(0.0899)	(0.0940)
Sales Level (SALES)		-0.1995*	-0.1524	-0.1588	-0.0259
		(0.1044)	(0.1129)	(0.1137)	(0.1208)
Dummy for employees (EMP)			-0.3608*	-0.3595*	-0.2298
			(0.2064)	(0.2064)	(0.2166)
Log of age (LAGE)				0.1056	-0.0138
				(0.2147)	(0.2251)
Proportion of Alternative Finance					0.6791***
in start-up phase (PIFS)					(0.1472)
Number of observations	159	159	134	134	134
Chi-square	0.1158	3.6495	3.0578	0.2421	21.2840
Probability	0.7336	0.0561	0.0804	0.6227	<.0001

Table 11 Firm Growth and Finance: Pooled OLS Regressions using the *Prowess* Database (1996-2005)

This table presents results from panel regressions with year- and (firm) location-fixed effects and sales growth (in percentage) as the dependent variable. In order to calculate a firm's growth (in sales), we need at least two consecutive years' data for the firm, but allow for different firms having different number of observations on growth. We include but do not report industry (18 classifications) dummy variables. The listing dummy equals one if a firm is publicly listed (at the beginning of a given year). The *lagged* bank finance dummies equal one if a firm has at least one bank loan one, two or three years prior to the current year. Standard errors of all firms from the same state are clustered to allow for possible dependence of error terms. ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ASSETS(Log of Assets)	0.019***	0.013***	0.019***	0.019***	0.023***	0.014***	0.023***	0.023***	0.025***	0.020***	0.024***	0.025***	0.026***
	[0.003]	[0.004]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.004]	[0.003]	[0.003]	[0.003]
Log(1+Age)	-0.170***	-0.170***	-0.172***	-0.170***	-0.167***	-0.169***	-0.195***	-0.167***	-0.161***	-0.161***	-0.185***	-0.160***	-0.160***
	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.013]	[0.011]	[0.012]	[0.013]	[0.013]	[0.012]	[0.012]
Listing Dummy	-0.038**	-0.040**	-0.038**	-0.035**	-0.032**	-0.034**	-0.030*	-0.045***	-0.026	-0.026	-0.023	-0.034	-0.021
	[0.016]	[0.017]	[0.016]	[0.016]	[0.016]	[0.015]	[0.016]	[0.015]	[0.016]	[0.016]	[0.016]	[0.021]	[0.016]
Log(Per Capita Bank Credit - State)	-0.000	0.000	0.000	-0.000	0.000	0.001	-0.000	0.000	-0.004	-0.003	-0.003	-0.004	-0.004
	[0.011]	[0.010]	[0.011]	[0.011]	[0.012]	[0.011]	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]
Log(Per Capita GDP Constant Prices-State)	-0.085	-0.090	-0.083	-0.085	-0.029	-0.025	-0.029	-0.029	-0.062	-0.071	-0.064	-0.063	-0.059
	[0.094]	[0.095]	[0.094]	[0.094]	[0.115]	[0.119]	[0.115]	[0.115]	[0.149]	[0.155]	[0.150]	[0.148]	[0.148]
1 year Lag Bank Finance Dummy	0.001	-0.043**	-0.001	0.005									0.015*
	[0.010]	[0.019]	[0.042]	[0.011]									[0.008]
1 year Lag BFD*ASSETS		0.015**											
		[0.006]											
1 year Lag BFD*AGE			0.001										
			[0.014]										
1 year Lag BFD*LISTED				-0.007									
				[0.021]									
2 year Lag Bank Finance Dummy					-0.083***	-0.165***	-0.251***	-0.101***					-0.061***
					[0.007]	[0.017]	[0.031]	[0.016]					[0.006]
2 year Lag BFD*ASSETS						0.026***							
						[0.005]							
2 year Lag BFD*AGE							0.069***						
							[0.011]						
2 year Lag BFD*LISTED								0.031*					
								[0.017]					
3 year Lag Bank Finance Dummy									-0.084***	-0.128***	-0.265***	-0.097***	-0.074***
									[0.008]	[0.020]	[0.018]	[0.017]	[0.007]
3 year Lag BFD*ASSETS										0.014***			
										[0.005]			
3 year Lag BFD*AGE											0.073***		
											[0.005]		
3 year Lag BFD*LISTED												0.021	
												[0.025]	
Constant	1.680*	1.635*	1.413	1.680*	0.809	1.044	1.017	0.815	1.346	1.299	1.433	1.359	1.321
	[0.854]	[0.858]	[0.843]	[0.853]	[1.049]	[1.046]	[1.021]	[1.049]	[1.367]	[1.387]	[1.379]	[1.359]	[1.361]
Observations	40,750	40,373	40,719	40,750	37,043	36,751	37,029	37,043	32,967	32,728	32,958	32,967	32,967
R-squared	0.026	0.026	0.026	0.026	0.028	0.028	0.029	0.028	0.028	0.028	0.029	0.028	0.029
State FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 12 Firm Growth and Finance: Instrumental Variables (*Prowess* Database)

This table presents results from a two-stage least square procedure examining finance and firm growth. In both stages we run panel regressions with year- and (firm) location-fixed effects, and include but do not report industry indicators (18 categories). In the first stage (OLS), the dependent variable is a lagged value of the Bank Finance Dummy. The listing dummy equals one if a firm is publicly listed (at the beginning of a given year). To account for the possible self-selection bias in the access to bank finance we include use two instruments: the log of the number of bank branches per firm in a state (in a particular year) and total bank credit per firm disbursed by the banks in a state (with different lags). In the second stage (OLS), the dependent variable is sales growth (in %). In order to calculate a firm's sales growth, we need at least two consecutive years' data for the firm, but allow for different firms having different number of observations on growth (unbalanced panel). We use the predicted values of the bank loan dummies (from the first stage) as the main explanatory variable. Standard errors of all firms from the same state are clustered to allow for possible dependence of error terms. *, ** and *** denote statistical significance at 10%, 5% and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
	First Stage: Bank Finance Dummy (BFD)	Second Stage: Sales Growth	First Stage: Bank Finance Dummy (BFD)	Second Stage: Sales Growth	First Stage: Bank Finance Dummy (BFD)	Second Stage: Sales Growth
ASSETS(Log of Assets)	0.046***	0.051	0.043***	0.025	0.038***	0.013
	[0.001]	[0.035]	[0.001]	[0.019]	[0.002]	[0.020]
Log(1+Age)	-0.018***	-0.182***	0.016***	-0.166***	0.041***	-0.172***
	[0.003]	[0.015]	[0.004]	[0.010]	[0.004]	[0.022]
Listing Dummy	0.064***	0.007	0.127***	-0.027	0.170***	-0.076
	[0.005]	[0.048]	[0.005]	[0.055]	[0.005]	[0.086]
Log(State Bank Branches/Company)	0.168**		0.293***		0.284***	
	[0.080]		[0.088]		[0.103]	
Log(State Bank Credit/Company, Lag 1)	0.009					
	[0.006]		0.018***			
Log(State Bank Credit/Company, Lag 2)			[0.007]			
Log(State Bank Credit/Company, Lag 3)					0.019***	
					[0.007]	
1 year Lag Bank Finance Dummy		-0.693				
		[0.748]				
2 year Lag Bank Finance Dummy				-0.128		
				[0.425]		
3 year Lag Bank Finance Dummy						0.210
						[0.507]
Constant	-1.241*	0.986***	-2.539***	0.835***	-2.549***	0.833***
	[0.685]	[0.177]	[0.758]	[0.034]	[0.886]	[0.041]
Observations	40,681	40,681	37,081	37,081	32,985	32,985
R-squared	0.075		0.081		0.102	
F Statistic	58.62	17.12	59.71	18.21	69.60	16.48
Hansen J Statistic		0.629		0.315		2.147
J Statistic p-value		0.428		0.575		0.143
State FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Figure 1 Effects of the Legal System on Survey Firms

The "Reliance on Law" (ROL) index combines the responses to three questions in our surveys enquiring about the respondent firm's preferred action if they faced defaults, breaches of contract and dispute settlements. To form this additive index, we assigned a value of 1 wherever the firm chose to settle matters through courts or other legal mechanisms; and a value of 0 for any other recourse. Thus the value of the ROL index can range between 0 and 3.

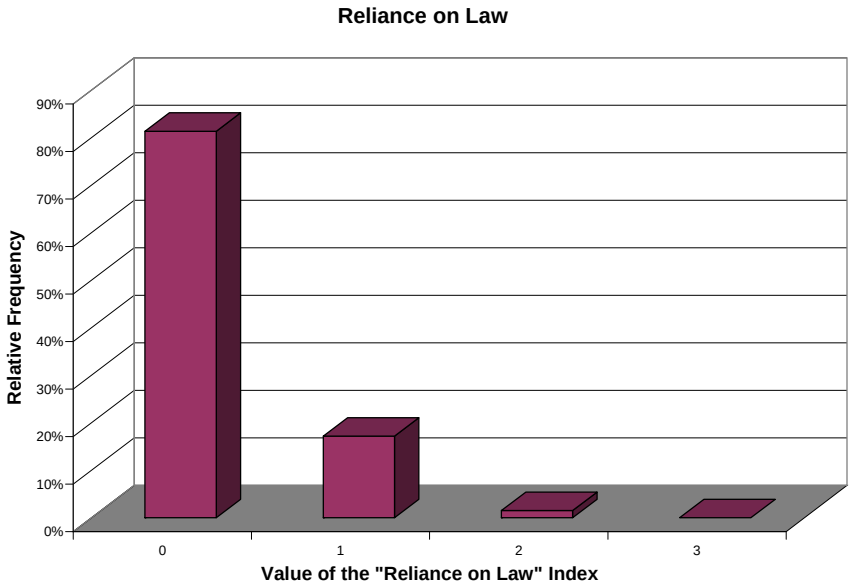
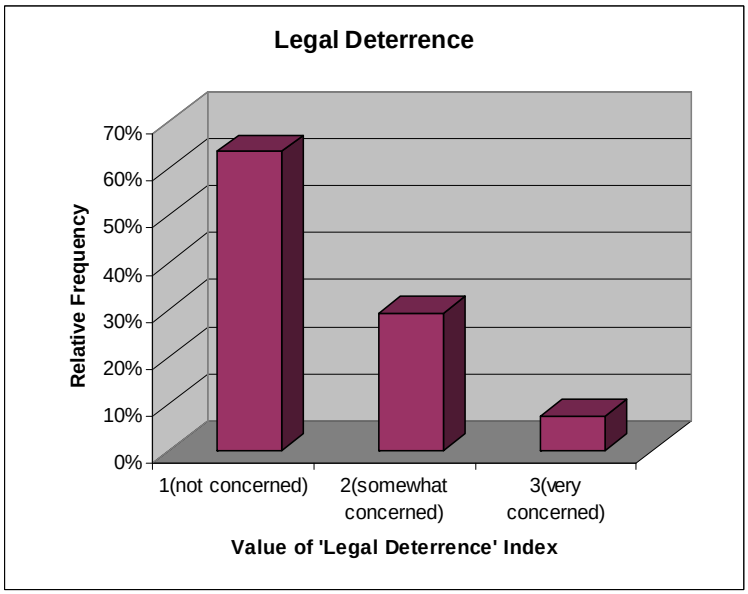


Figure 2 Legal and Non Legal Deterrence

Panels A and B show the "Legal Deterrence" (LD) and "Non-Legal Deterrence (NLD)" indices respectively. We construct the LD index by combining the responses to a single question probing the respondents' concern for legal penalty (being sentenced by court) if *their* own firms were in violation of contracts. The respondents rated their concerns on a 1-3 scale (1= Not concerned at all; 2 = somewhat concerned; 3 = very concerned). Thus the value of the index can range between 1 and 3.

Panel A



(Figure 2) Panel B

We construct the NLD index by using the responses to the same question that is used for the LD index. For this index, the ratings for five non-legal concerns (loss of reputation, loss of business in the same geographic area, loss of business in another geographic area, future financing difficulty, and fear of personal safety) on a 1- 3 scale (1 = not concerned at all; 2 = somewhat concerned; 3 = very concerned) are considered. We average the ranks of the five concerns. Note that not all respondents ranked all the five concerns. Thus, the value of the NLD index ranges from less than 1 to and 3.

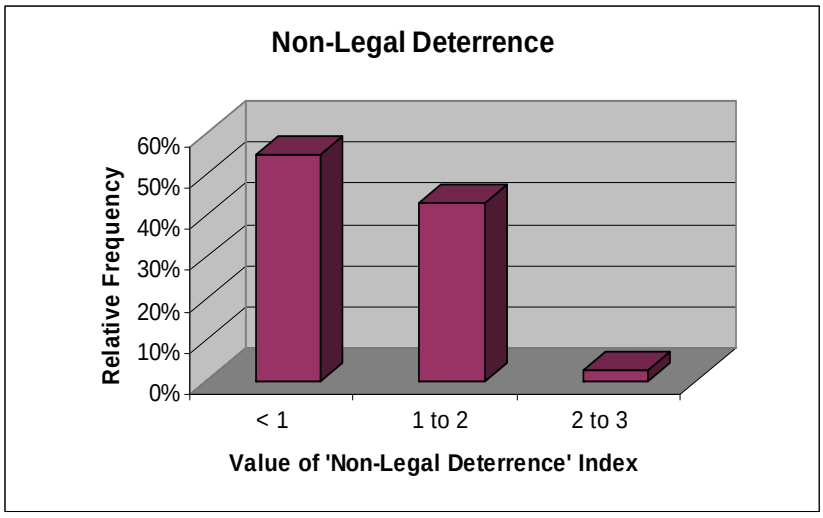


Figure 3 Financing Channels for Survey Firms

This figure highlights the relative importance in the start-up phase and the ease of obtaining funding in the growth stage from institutional and alternative sources. Alternative finance includes financing from friends and family and trade credit. Institutional finance includes banks, private credit agencies and individuals, government funding and venture capital for the start-up phase and short-term and long-term bank credit, loans from specialized lending institutions like SIDBI and SFC as well as private equity/debt from investors within India. Survey respondents rated each source on a 1- 4 scale (1= least important (extremely difficult and costly to access); 4 = extremely important (very easy and low cost)). The average ratings of sources within the institutional and alternative groups are reported in the figure.